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1876-87

YEAR-BOOK

—OF—

ALBION COLLEGE

—FOR—

1886-87.

ALBION, MICHIGAN.

*PUBLISHED BY ALBION COLLEGE
1887.*

WARREN & BISSILL,
Printers,
ALBION, MICH.

❖INTRODUCTION❖

IN giving this Year-Book to the public we have two objects in view. We seek to contribute in some measure to the solution of the problem of education which is now engaging the thoughts of many earnest educators and friends of human progress. We also desire to lay before the people the plans and spirit of work as it is carried forward at Albion College.

The state and the church should not be competitors in the educational field. They should co-operate so that the two shall accomplish more than either alone can possibly achieve. In erecting a state university it was not intended to throw any obstruction in the way of church efforts to educate the people. It was a practical and effective recognition of the duty of the state to care for the instruction of the young. And it is as much the duty of the church to make provision for the education of the people as if the state failed in the discharge of her obligations. The christian church can reach a class which the state is unable to influence. It can also supply positive religious influences and guidance which secular schools cannot guarantee.

We call special attention to the following facts in connection with Albion College. The institution is under the control of the Methodist Episcopal Church, but is not sectarian in its spirit or movements. Many of the students come from families belonging to other churches.

The moral atmosphere is always healthful. There is an earnest spirit of work, a large measure of the enthusiasm of learning. This has been steadily on the increase for several

years. We hope the reader will carefully examine the research method adopted a year or two ago.

The appliances for instruction, it will be seen, are rapidly increasing, and are exceedingly valuable. The map system for illustration of all historical movements and changes is entirely new and far superior to any other system devised. The provision in this line is becoming very comprehensive, and we are rapidly carrying forward the work of preparation to cover all countries and all ages. Aside from the chemical and physical laboratories, we are building up an extensive biological laboratory in which much original work is done by the students, by the use of microscopes. The astronomical observatory is supplied with first-class instruments. The library is growing and the reading-room contains the leading magazines and reviews of the times. The museum is comprehensive and increasing in value.

The Conservatory of Music has gained an enviable reputation. Instruction is given on nearly every kind of instrument. Voice culture receives special attention. The students in this department are taken through very thorough courses of study. The course in music covers four years of time, and the musical and literary course six years. The college has a fine orchestra of about fifty pieces, and some musical clubs. The department of Painting is of high order. It is provided with a fine and well supplied gallery, and instruction is given in every form of the art.

The courses of study are comprehensive and taught with thoroughness. The order of work is in harmony with a principle which we claim to be philosophical and a decided modification of old college methods. A Commercial department has been recently established in which a much wider range of study will be afforded than in the separate commercial schools of the state. To receive a diploma of graduation several literary studies must be completed.

The authorities of the institution will be gratified to have the foregoing statements tested by teachers and friends of education. Visit the college and inspect the work done.

PART I.

EDUCATIONAL PROBLEMS.

SECTION I.

WHAT IS EDUCATION?

THE import of the word education [*e* out, *duco*, to lead,] leading out, very correctly presents the most important result of study. The powers of the mind in early life lack that strength and precision of action which, under proper training, they may acquire. There is a childhood of mind as there is a childhood of body; and there is a law of intellectual growth, as there is a law of physical growth. One of the chief purposes of study should be to secure a progressive development of the faculties of the intellect. The attention should be disciplined; the power of application should become greater; the energy of thought should be intensified. Memory should be strengthened by the clearness and penetrating power of the mental gaze. Accuracy, thoroughness, a living interest in the objects of attention, ought to give to the faculties of cognition a depth and reliability of action before which all difficulties fade away. The great work of education is to secure the ability to do, to enlarge and guide all our powers of intellect, to lead the faculties of the mind in their struggles with ignorance and error out into the field of victory.

But the development of the faculties of the mind is attained by the very conditions of activity through which intelligence is gained. Scholarship and intellectual strength come together;

they are a joint product of wise methods of study. There is a two-fold work, achieving power and gaining knowledge, and they ought never to be separated, they need never be separated. Mental development increases the power to learn, and learning promotes development of the faculties of cognition. He is best educated whose scholarship is the most comprehensive, and mental powers are trained for the most accurate thought and the most successful grappling with truth—intellectual energy most mighty and fund of knowledge most complete. In establishing the law of the unfolding of mental powers, God intended that these powers should be progressively unfolded; and in placing us within a universe of truth, which we are able to learn, it was his purpose that we should become intelligent in regard to the objects of thought. That person only fulfills his mission intellectually—in other words, carries out God's plan—who gains the greatest amount of knowledge and acquires the largest measure of intellectual strength.

SECTION II.

THE SCHOOL AND THE STATE.

The citizen cannot discharge his duties to the state unless intelligent. Under our form of government all political power is lodged in the people. Universal suffrage gives to every male citizen who is 21 years old a voice in the administration of public affairs. Suffrage being universal, intelligence should be universal. Compulsory education is not therefore a hardship. He who is permitted to cast a vote on state and national issues should be required to fit himself to act intelligently. Hence, the public school system has been instituted as an effectual and economical method of educating the young. Though woman does not possess political franchises, she largely inspires and guides the education of the young, and hence, not only for herself, but for them, she needs breadth of scholarship and culture of mind. There is no interest for which the state should

care that is more important than the public school. Liberal financial support should be afforded. Wherever practicable the schools should be graded. The best appliances should be provided. Care should be taken that none but competent teachers be employed, and they should receive adequate compensation for their services. Penuriousness on the part of school boards will drive capable teachers out of the profession, and a cheap school is sure to have a cheap quality of work. The reason for the employment of any teacher is a reason for the employment of a capable one. It would be no more unwise to employ an incompetent railroad engineer to run a train than an incompetent guide of the mind of the young in its preparation for life's great work.

SECTION III.

ILLITERACY.

This word, as ordinarily used, means the inability to read and write. It is a condition in which persons are shut out from the sources of knowledge afforded by the press. To be unable to read books or papers, letters from friends, or of a business character, dooms the individual to a degree of ignorance that is nearly an intellectual night. According to the census of 1880 for the United States, out of a population of 50,155,783, there were 6,340,558 persons over ten years of age that could not write—that is, one-eighth of our entire population. Of this illiterate class, 1,442,064 reside in the North, and 4,804,528 reside in the South, making the percentage of illiterates in the South nine times as large as in the North. The number of illiterate white males over twenty-one years old, and therefore voters in the United States, is 7.8 per cent.; and of the colored, 68.7, giving us about 2,000,000 voters who cannot write their names. About 1,100,000 of the above belong to the colored population, the natural fruit of slavery. The following table gives the percentage of illiterates—persons ten years old

and upward, males and females, whites and blacks—in the United States, according to the census of 1880:

States.	Per cent. of Illiterates.	States.	Per cent. of Illiterates.
Alabama,	50.9	New Jersey,	6.2
Arkansas,	38.0	New York,	5.5
California,	7.8	North Carolina,	48.3
Colorado,	6.6	Ohio,	5.5
Connecticut,	5.7	Oregon,	5.5
Delaware,	17.5	Pennsylvania,	7.1
Florida,	43.4	Rhode Island,	11.2
Georgia,	49.9	South Carolina,	55.4
Illinois,	6.4	Tennessee,	33.7
Indiana,	7.5	Texas,	29.7
Iowa,	3.9	Vermont,	6.0
Kansas,	5.6	Virginia,	40.6
Kentucky,	29.9	West Virginia,	19.9
Louisiana,	49.1	Wisconsin,	5.8
Maryland,	19.3	Territories.	
Maine,	4.3	Arizona,	17.7
Massachusetts,	6.5	Dakota,	4.8
Michigan,	5.2	District of Columbia,	18.8
Minnesota,	6.2	Idaho,	7.1
Mississippi,	49.5	Montana,	5.3
Missouri,	13.4	New Mexico,	65.0
Nebraska,	3.6	Utah,	9.1
Nevada,	8.0	Washington,	7.0
New Hampshire,	5.0		

By computation and comparison it will be found that the average percentage of illiteracy in what are called the Northern States, is 5.3—in the Southern States, 35.5. Where the public school existed and labor was dignified, illiteracy was only about one-seventh as great as in that part of the union where slavery crushed out both free labor and the spirit of education. The census also contains facts which do not appear in the above table. The illiteracy of the *native* whites in the northern states is 3.2, but in the southern states it is 19.5. Thus slavery not only degraded the negroes, about three-fourths of whom to-day cannot read or write; but the illiteracy of the native whites in the South is six times greater than the same class in the North.

It would be interesting, did space allow, to collate the facts relating to the illiteracy of other nations. A few figures only must suffice. The illiteracy of England is 33.00 per cent.; France is 33.00 per cent.; Germany is 12.00 per cent.; Italy is 73.00 per cent.; Russia is 91 per cent.; Spain is 80 per cent.,

while Denmark, Norway, Sweden and Switzerland are nearly free from illiteracy. Turning to Asia we find that in India 90 per cent of males are illiterate, and nearly all the females. In China large inducements are held out to the males to become educated, but the females are kept in ignorance. Everywhere in Asia woman is deprived of the advantages of education. In this country not only are the privileges of the primary schools granted to the female sex, but college doors are being thrown open to her. In the high schools and colleges our young women are showing a capacity for gaining knowledge not inferior to their brothers.

SECTION IV.

PERILS FROM ILLITERACY.

The safeguards of the nation are intelligence and morality. These are not identical. An individual may be moral and not intelligent, and there are many learned persons who are not moral. It is reasonable, however, to suppose that school work—the pursuit of truth—is repressive of immoral thoughts, that in the elevation of the intellectual life there is a tendency to weaken that which is base in human nature. The passions grow by being fostered, and all that is necessary to foster them is to make them the object of thought. So far as the mind works in other channels it leaves the passions without nourishment. Statistics on the relation of ignorance to crime are not very complete, but the attention of different governments is now being given to this subject. The statistics gathered in France in 1870 showed that while among the educated classes criminals were in proportion of 1 to 9,291 persons; among illiterates there was 1 to 41, making the ratio of 1 to 226 in these two classes. Statistics collected elsewhere do not give so great a disparity. But, if the percentage of criminals is only eight or ten times larger among illiterates than in the balance of the population, it makes a fearful disparity which ought

to engage the serious attention of the philanthropist and statesman. There are some plain reasons for the greater frequency of crime among illiterates. Ignorance and poverty are very commonly associated. Education gives business capability. There is a strong temptation to commit crime among those who are unable to acquire property. And education not only adds to the capability of man as a producer, but it contributes to the feeling of self respect, thus lifting the person above the plane where crime is natural. The ignorant class are also easily deceived and led into ways of wrong-doing by designing men. The poor ignorant whites of the South, in the recent war of the rebellion, fought to uphold an institution which made them poor and degraded. Slavery was a terrible curse to them as it was to the blacks, yet they supported it with no less spirit than did the slaveholder himself. Illiteracy thus brings fearful dangers to the individual, promotes crime, engenders social disorder, and weakens the pillars of state.

SECTION V.

SELF-MADE MEN.

This expression seems by implication to affirm that there are men who are not self-made—that they are made by the college, or by the wealth of parents, or by some providence that relieves them of labor. Now we glory in self-made men, but assert that every man who reaches an exalted intellectual life must make himself, whether he be in college or out of college. No college faculty can put knowledge into a young man's mind, to any extent make a scholar of him, or impart to him vigor of intellectual activity. A person may shovel coal into a bin, fill an elevator with wheat, or load a man with natural wealth, but he cannot pour knowledge into the mind of another. The individual must himself reach forth and gather it. It is by personal effort he must make the conquest, not less while in college than if dwelling in the seclusion of the desert. All learning, under

all circumstances, is self-gained. But some conditions are more favorable than others to success in our efforts to gain scholarship. A college gathers in its library the best thought of all ages, bringing the means of knowledge within reach. It supplies in cabinets and museums what otherwise could not be obtained without travelling over many lands, or, perhaps, the whole earth. It provides instruments for astronomical study which can be found nowhere else. It puts within the reach of the student physical, chemical and biological laboratories which, employed by the seeker after knowledge, open the way into the chambers of nature, of which he would otherwise be deprived. It brings to his aid a body of learned men, not to do his work for him, but to guide him in his search for truth. To the young man or woman, therefore, the college provides the best possible opportunities for the employment of mental energies in the acquisition of knowledge and the strengthening of intellectual powers. Here the work of making himself learned and strong, getting a preparation for the great battles of life, can be most successfully performed. Because we believe in self-made men, and that every young man ought to make the most of himself, we believe in colleges. The grandest manhood can be wrought out when the conditions are most favorable.

SECTION VI.

WHY GO THROUGH COLLEGE?

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- To obtain knowledge.
 - To secure culture.
 - To widen the range of intellectual vision.
 - To develop power.
 - To broaden and deepen the life.
 - To become a leader in the world of thought.
 - To procure self-poise of mental life.
 - To lay the foundation of greatness.
 - To fit for usefulness.

The young man who anticipates entering the legal profession knows that he needs an extensive foundation in scholarship, and faculties sharpened and broadened so that nothing can escape the keenness of his vision or defy his powers of comprehension. Every member of the medical profession deals with the most abstruse problems in his efforts to relieve suffering and save human life. If the discipline of a college course can give him a clearer intellectual vision, he is almost criminal if he does not seek to gain the needed mental energy. The statesman, into whose hands the destiny of a great country is placed, would show but little appreciation of the gravity of his work did he not endeavor to secure special training for his mission. He who is to be the teacher of the mind is bold indeed to attempt to fill his responsible office without drinking deeply at the most abundant fountains of knowledge. The minister of the gospel whom God employs to use his powers in saving souls should feel that the most weighty of all reasons urge him to gain the widest scholarship and the grandest reach of thought. To broaden the manhood, lift up to the highest intellectual plane, every person, whether contemplating a professional life or the prosecution of business; fulfilling the duties of citizenship, or seeking to be a man among men; should remember that the faculties of the mind were given to be improved, and that every one falls below his privilege who does not make mental culture a supreme object of effort.

For every reason it pays the individual to go through college, and the public to support colleges. Brains are worth more than money. Developed intellectual faculties are much more efficient than faculties untrained. The success which study insures more than compensates for the time and money expended. Learning how to think, gaining the habit of close and profound thought, these are the foundation of every sublime life. To be a prince among thinkers, is it not a higher honor than to be in possession of millions of money without the power of thought? Educated lands become wealthy. Colleges create civilization, and civilization adds immensely to the resources of a country. Education

is God's method of developing the human mind; it is a potent agency in the church, and the safeguard of the state. Therefore it pays the individual to strive after the broadest culture. It pays the family to introduce within its circle all the learning that can be gained. It pays the church to have an educated ministry to shape and lead forward the thoughts of the age, and also an educated laity to control public opinion in the interest of religious truth, thus exerting the largest influence over men to bring them to Christ. It pays the state to foster higher institutions of learning, for thus is morality promoted, the rights of franchise are more intelligently exercised, a firmer foundation is placed underneath the government, the resources of the land are more rapidly developed, and all the interests of the public are more completely conserved.

SECTION VII.

THE LOWER SCHOOLS SUPPORTED BY THE HIGHER.

In strengthening the school system, must we begin with the lower or the higher schools—with the common school or the college? A moment's reflection will convince any one that the lower schools are dependent on the higher schools for their success. The public school does not, by its improvement—its gaining greater excellency—lift the college up to a higher plane, but rather is it true that the higher institutions are the sources of improvement for the lower schools. As colleges do better work, as they turn out better scholars and diffuse a more inspiring intellectual atmosphere, both by the influence they exert and the greater capability of the teachers with which they supply the lower schools, these become better managed and in every way are elevated in their tone. Although a small percentage of young men and women pass through college, these hold the lever of power and lift the public scholarship up towards the plane they occupy. Money laid upon the altar of our higher

institutions of learning blesses the schools of a lower grade. Without the colleges and normal schools the public school system would be a failure. The paradox, then, is only seeming that the higher supports the lower. To make the common schools more efficient the schools of a higher grade must first be made more efficient. As they are lifted up all that is beneath them receive corresponding help.

SECTION VIII.

THE MOVEMENT OF THE INTELLECTUAL LIFE, AND THE ORDER OF PROGRESSIVE SCHOLAR- SHIP.

[FROM THE UNKNOWN TO THE KNOWN.]

To the infant everything is unknown. At the beginning there is no knowledge; the mind is in a state of vacancy. The unfolding of the powers of the intellect is accompanied by the acquisition of knowledge, of constantly increasing light. The great world of truth gradually comes within reach of the mental vision, so that the mind is more and more rationally employed upon themes of thought. In this sense, only, is it proper to say that the order of movement of the intellect is from the unknown to the known. It comes out from the state of the unknown into the state of the known; in other words—and this is all it means—it acquires knowledge and gains wisdom. But how is this done? Very largely by proceeding

[FROM THE KNOWN TO THE UNKNOWN.]

This last expression has been criticised, but, it would seem, without fully understanding its import. Underneath all investigations, preceding all determinations in science, at the foundation of all reasoning in logic there must be the known, some truth grasped by the intellect as a starting point and basis of mental operations. In mathematics there are axioms clearly perceived, without which not a step can be taken. In science there are universal principles, and observation precedes class-

ification. Philosophy, to have any meaning or force, must rest on the infinite. To make all truth an inference or result is an absurdity; no truth can be reached by reasoning without starting from truth, which guarantees the validity of the conclusion drawn. For every logical operation there must be premises. If all things must be proven, we have the "vicious circle"—of at last proving the thing by itself—or else we are guilty of holding to the theory of "*infinite* regress of finite causes," seeking to get rid of the infinite by employing the infinite. In the nature of the case all finite things must have a beginning in time; in other words, they belong to a finite series and begin in some definite act, which is an explanation of the series. All progress in science is made through the guidance of truth already apprehended. In the unity of nature, that which is unknown must belong to the same system as the known—that is, the known and unknown must constitute an unbroken, indissoluble system; hence, the known shadows forth the unknown, and we are able to enter the domain of the unknown, and search out its mysteries solely by means of the light which the known supplies us. The motto, "from the known to the unknown," simply expresses a law of mental action—never broken—that on the basis of the known, and from the starting point of the known, we penetrate the domain of the unknown, and make it to be the known, because all truth is a unit. Hence, the more clear and absolute our knowledge the more fully are we equipped for future mental conquests. The unknown can become the known only as there is a body of the known to act as a guiding star, and also to serve as a criterion for supposed knowledge. Hence the advice we give to the student is, leave nothing half-learned. Bring every truth into the focus of intense mental light, that its whole meaning may be understood. Then the illumination gained will light up the borders of the unknown and make the way plain for the acquisition of new truth.

[FROM THE EMPIRICAL TO THE RATIONAL.]

Apprehension first, explanation afterward, that is, an object

must be perceived before the reason of it can be known, or thought of. The knowledge of the child is almost wholly empirical. This is also true of the uneducated. To understand anything is to know it as belonging to a class, "to apprehend it according to certain *general notions, ideas and laws.*" In early life therefore the mind is employed in learning facts and apprehending realities; then as time passes on putting facts and realities more and more into their true place in the great system of truth, finding their relations, explaining them in the light of universal principles which lie underneath them all. No one can doubt that the empirical is the chronological, and hence the psychological, antecedent. The mind first perceives the concrete, then comes to the abstract or principles which are involved in the concrete and are an explanation of it. In the order of mental operations the logical antecedent—the rational principles—comes last, and is reached through the concrete. The true philosophy of school work, both in the order of studies and mode of instruction, would put the empirical before the rational, the what before the why. It is self-evident we cannot have the why until we have the what. If the principle here enunciated should be consistently and wisely employed the natural and only true condition of scholarship would be supplied.

[THE PSYCHOLOGY OF THE GENERAL OR COMPLETE NOTION.]

1. Simple apprehension of the object.
2. An act of the will in attention.
3. The analysis of the mass or whole.
4. The synthesis of parts restoring the whole, which differs from the whole in simple apprehension in that its nature is now perceived, it is ready to be named and put in its proper class. The value of each step is apparent. Were it not for the act of attention no real knowledge would be possible. There could be no analysis or study of the object. The power and closeness of attention is the key which unlocks the mysteries of being. Every concrete object is complex. There is no other way to determine its nature than to take it in pieces and note the character of each part of which it is composed. Then by

putting the parts into the relations they sustain with each other, reaching the unity of the synthetic whole, and referring it to the class to which it belongs in its genetic state, we have done all we could do in the study of the object in the light of science. Philosophy, however, takes it one step farther, for it asserts that back of the conditioned must be the unconditioned; that all finite things must have an origin, and hence an Originator. It therefore unites all systems of truth on the foundation of infinite intelligence. Creation rests on the infinite reason. Thus the unity is complete, and thought finds the "ultimate of ultimates"—it takes the last step in the movement and sweep of knowledge.

SECTION IX.

HALF-TRUTHS MISLEADING.

Half-truths are often untruths. If understood to be but half-truths, and are held only as stepping-stones to something further, they serve an important purpose; but if treated as a finality they are entirely delusive; our convictions are not only partial, but contain positive errors. To describe man, as did an eminent philosopher, as "a two-legged animal without feathers," in leaving out the principal part and taking a small fraction for the whole, gives us an untruth. To consider man simply as a being of peculiar physical organization, omitting the mental and spiritual, is to live in an intellectual mirage.

Much of the teachings of to-day are partially false in their studied incompleteness. Nature is wonderful, but to present it to the student as though there was nothing beyond, is to tear down the very temple of truth. Nature as a pathway to a personal God—the author and guide of the universe—is full of wholesome and safe instruction, but to teach it as a finality is to create a fatal delusion. "Creation by law" if understood to be "creation according to law," recognizing, therefore, a final purpose and definite plan, and hence an infinite and creative

intelligence, is a sublime truth; but if understood to mean that law creates, that there is no power back of law—no personal God—it is not only an absurdity in philosophy, but a doctrine that sets aside that which is the foundation of science, and which is by far the greatest part of truth. To treat the hand as the body, though necessary to the body with its wonderfully differentiated organization, would be sure to be received with contempt. And to consider nature, with its dependent life and being, as self-existent, clothed with the attributes of independence, is to hold to a positive untruth. To assume to explain the universe by enumerating its forces, and giving their mutual relations, is the absurdity of accounting for the whole simply by giving some of its dependent parts. Forces are only a part of a complex of dependent reality. The philosophy of the conditioned can only be found in the unconditioned; and to construct any system of philosophy or truth, without recognizing the divine will, is a blind or perverse effort to build on nothing and assume that there is a real foundation. Teaching the student to limit his gaze to the contingent, forgetful of the necessary, is like teaching that the earth, astronomically, can be studied and understood with the sun left out. The earth and the planets together are not the solar system. There is a central sun that swings them all in space, and astronomy cannot be understood without it. So all worlds, with all their physical contents, and with man at the head, are not the sum of being; they but live upon, and are ruled by, the infinite Sun. Every student should embrace in his thoughts the divine source of dependent being, or his system of truth, as he calls it, is a constant delusion.

SECTION X.

EDUCATION AND THE LABOR PROBLEM.

Workingmen tell us that in all the relations they sustain to capitalists they are oppressed; that they have no voice or but little

voice, in determining the rate of wages or deciding on the number of hours they shall labor. Capital and labor do not occupy the same plane; they are not equal factors of an industrial democracy. Capital, it is affirmed, always has its hand on the throat of labor, and rules in a despotic spirit. Personal rights and dignity go but a little way. Manhood is less than money. Wealth in the hands of one man rides over a thousand men who have no possessions but their muscles and brains. Such is the degrading and, we are told, wicked inequality that now exists throughout the industrial world. Hence the conflict which to-day is raging in all these lands.

Admitting this inequality, and that in it there is a considerable measure of wrong, the question would very naturally arise as to the extent this unhappy state of affairs is due to ignorance. In other words, what can education do to remove just grounds of complaint, and destroy, or at least lessen, the conflict that has reached such alarming proportions?

It is by no means certain that they who have business capacity are all in the class of capitalists, and that they who do not possess business capacity are in the class of workingmen. Many men are capitalists, on a larger or smaller scale, through inheritance or other forms of good fortune to which they have done but little to contribute. And it is doubtless true that there is a large percentage of workingmen who are endowed with real business talent which only needs a fair chance to make itself felt in the world. The line separating capitalists and workingmen does not at the same time necessarily separate capacity from incapacity. That which will change the direction of this line, putting on the business side all who possess native business talent, will accomplish as much for man in his industrial relations as can be wrought out for him. Will education do this?

Mental culture, so far as it is synonymous with intellectual development, greater ease, precision, and power of action of cognitive faculties, may rationally be supposed to enlarge business capacity. It is estimated that an ordinary district school education adds fifty per cent. to the wage-earning capabilities of a man ;

a high school education one hundred per cent.; and a college education two hundred per cent. As all the capital of the world is a product of man's mental energies, that which adds to their efficiency will be sure, to some extent, to increase this capital. Outside of mind there is no power. Force never generated a single dollar of wealth. It is only as mind utilizes force, employs it in channels where otherwise it would not operate, that capital springs into being. Hence, in general terms, the more of mind we put into the industry of the world the larger the amount of products that will accrue therefrom. Thus it seems to me to be true, not only that education would secure an intellectual elevation of the laboring man, broadening his life, giving him more strength, making him a more intelligent citizen, a wiser legislator and a safer guide, but that the mental power generated would act favorably on the industrial arts, that better scholarship would give us more successful business men, that greater intelligence would make itself felt for good in all the avenues of material production. It is conceded that one of the most dangerous elements in this republic to-day is the illiterate class. Seven millions of persons who cannot write their names or read a political platform, nearly one-third of whom are voters, hold the balance of power in civil affairs, and make the decision of political questions a travesty on intelligence. But illiteracy and vice very largely clasp hands. The indolence of the people has its focus among those who, from lack of spirit or from untoward surroundings, content themselves with the darkness of ignorance and the incapacity resulting therefrom.

Thus far we have spoken of education only as mental training. Can there not, should there not, be something more? There is a professional or business side to education at which we may look.

That there is value in arithmetic, bookkeeping, geometry, mechanics etc., aside from mental discipline, is clearly evident. They give a knowledge of methods on which skill rests. While they are disciplinary in the employment they furnish the mind, they also open up channels into the domain of business. If all

our laboring men were versed in such branches of learning as have a business side, they would possess the capability of guiding the industries of the land instead of being, many of them, mere human machines. Thus there would be mental power skillfully employed in the several great fields of production. Such men could not long be oppressed or trodden under foot. If education were compulsory, and greater prominence given to the classes of studies of which we are now speaking, would not laboring men be brought on to a vantage ground where they could wield decided power? In view of the issues pressed upon us by the Labor Problem, ought not greater attention to be given to technology?

But shall we stop at this point? In view of the disturbed state of the business world, of which we are having sad experience, should not more be done than to supply provision for the education of the people to the extent now indicated? That which is most alarming at the present time is the pernicious character of the theories in political economy which are boldly proclaimed and in many cases made the rallying cry of large organizations of men. This is the age of unsettled political science. The whole vast reservoir of political thought is now being stirred to its lowest depths, and crystallization has commenced at many points. In the semi-ignorance of such large masses of our people there is the probability, if not certainty, that views involving rights of property will be formed which contain the leaven of social disorder, if not anarchy and ruin. What can be done? If the schools, the press, the platform and the pulpit cannot guide the thoughts of the people, supply the light that is needed, clearly unfold the true principles of social and economic science, where can we look for help? Evidently the question is an educational one. A people will not be much worse than the standards they rear. Truth is mighty. When clearly unfolded and brought to the apprehension of the people it cannot for a long time be overborne. I am aware there are to-day no standards which all will accept. But cannot truth make her own standards? Is not her advantage over error so decided that

she will force acceptance? Though in the ferment of hot discussion in which vicious and unprincipled selfishness plays so noisy and blustering a part truth may be scorned or her merits hurried out of sight, will not a thoughtful calm at last take the place of the wild storm, and truth appear in her regal robes? If the people can be educated in correct principles of political science, if in all our schools the young shall be made clearly to understand the principles of human rights; if the press shall be both wise and vigilant; if they whose office it is to teach the public from any platform of influence and power shall speak with no uncertain voice, the work done will contribute largely to the removal of the antagonism now existing between labor and capital, or at least it will go very far towards providing the means for the conquest of right. And in the triumph of right, antagonism must fade away.

Religious observances and the support of religious institutions in this country are fortunately voluntary. The slightest religious constraint or compulsion by the government would be an impairment of individual rights and a usurpation on the part of the state. Yet without the leavening and transforming power of religion in society the restraints put upon many are inadequate for the protection of the rights of property and person. For the inculcation of religious truth are there any responsibilities beyond the family, the Sunday school, the pulpit and the religious press?

No explanation can be given of creation, physical and mental, without affirming infinite unconditioned intelligence. The conditioned universe must have an unconditioned cause. Agnosticism is a denial of the claims of philosophy, and a sweeping of the foundation from under responsibility. With no God the universe is a maze, an inexplicable congeries of finite realities, a product without a producer, events without a cause, order without design, a fulfillment of the laws of reason without being the work of reason, a great chapter of thought without a thinker. From it no lesson can be learned; it has no meaning and no purpose. Does not science consist of half-truths when it stops

short of ultimate cause, leaving out teleology, plan, and creative efficiency? And must not so-called science be feeble in its influence over the mind when it cuts loose from intelligence as its source, and intelligence as a supervising, controlling power? In other words, science without philosophy—without rational explanation—lands the thinker in a whirl of forces out of which order and purpose cannot issue, the darkness deepening as the gaze is more penetrating. We know of nothing more unsatisfactory and intellectually demoralizing than to sweep away all anchorage of thought. If knowledge is to possess decided power it must be able to justify its claims; it must lead us to an infinite fountain as a guarantee of its infallibility.

If, now, knowledge can be linked with infinite intelligence, a personal God, it brings with it an influence working for righteousness, conserving social order, upholding and energizing right, making education to be more than speculative thought, or the conception of invariable sequence in nature; it makes it to be a revelation of divine intelligence to the human understanding. And he who thus speaks to us, and has his eye constantly upon us, and of whose universe we are a part, is as a result of the same, our Ruler. Hence theistic science brings with it the fact, and tends to awaken the consciousness of personal responsibility in all our relations in life. Right living needs something more than clear thinking for a producing force; there must be heart-feeling growing out of deep moral convictions. Are we safe if knowledge be confined to cold, irresponsible thought? And does that condition of life meet the wants of the world in business, in government, and in the social state, in which systems of thought do not bring the mind into relations with Him out of whose intelligence such systems grow?

In the analysis we have made, it seems to us education accomplishes all it is capable of doing in adjusting for good the conditions of the labor problem. It is not a panacea. In the freedom of the human will, the selfishness of the human heart, and the almost universal disposition to shut the thought of final responsibility out of the mind, no practicable plan can be sub-

mitted which the philanthropist can work, or the state enforce, for the overthrow of wrong, and for the peaceful and righteous adjustment of the relations of labor to capital. Education made as nearly universal as possible, looking towards the discipline of mind, the application of natural science to the industrial arts, the inculcation of correct principles of political science, embracing a divine foundation for all truth and all reality, must be a decided power working in the direction of equal rights.

SECTION XI.

EDUCATION AND THE LABOR PROBLEM. (*Continued.*)

There are some barriers which we fear the work of education, however faithfully carried forward, cannot wholly surmount. One of these is the spirit of demagogism that is corrupting our entire political life. Politics and statesmanship are by no means identical. Statesmanship is far seeing, takes the distant future into account, lays the foundation on eternal principles of justice and right. It plans for the ages, seeking not the plaudits of the multitude and the immediate ascendancy of party, but the greater good of the country, which can only be secured by equity and the broadest philanthropy. It does not bid for votes, but takes them only as an endorsement of political truth. Demagogism, however, has its highest aim in the ascendancy of party; it acts on the adage that "all is fair in politics," that anything is legitimate which will catch votes. It looks to the triumph of to-day, asking no questions in regard to the morrow only so far as personal or party ends are served. The dominant principle is selfishness, in which patriotism is subordinate to party triumphs. It must, therefore, be unscrupulous and demoralizing, ready to pervert the best forces of our political life into channels of moral death. Now if, and so far as, labor organizations become political machinery, employing political methods, and are ruled by political ambitions, the good results which would naturally flow

from the spreading and deepening of the educational spirit will, to a considerable extent, be arrested. The social millennium which education might bring will come forward at a slow pace, if, indeed, it ever reaches this earth at all.

We see another great danger for us in the relations of this country to the old world. Should we succeed in educating the young reared on our soil there will, however, be an annual influx of people from across the sea, many of them without mental culture, and all of them brought up under political influences diverse from those which operate here; and, judging from the past, a considerable number of them will be sure to have imbibed political theories of the most dangerous character. Our peril is not from the Chinese, but from immigrants which come from the hotbeds of European socialism. The anarchists whose deeds of daring and death are now filling the country with alarm, are exotics, inoculating our civilization with a virus more destructive to civil order than the yellow fever has ever been to the health of some of our cities. The best system of education, most faithfully worked, cannot largely correct the evils which assail us from this quarter. Ours is not a police system, in which every man is assumed to be ready for conspiracy, and hence must be shadowed by an officer of the government for the defense of the state. With us there is almost unlimited personal freedom of action, and, in the absence of espionage, a social cancer may develop to very dangerous proportions almost before its presence is observed by the public.

There is another tendency still, which, while it has its good side, is also fraught with danger. We refer to the extraordinary growth of cities in this country. The ratio of population in our cities, as compared with the entire population of the land, is rapidly increasing. Nearly 20,000,000 of the 60,000,000 of our people are to-day living in cities. In this concentration of physical energies and mental life there is power. Here civilization, as appearing in the arts and in subjective mental culture, ordinarily finds its highest expression. There are the finest artists, the most successful men of business, the most talented

professional men, and the ablest editors in our cities. Here are gathered the largest libraries, the most complete museums in science and art, with the largest concentration of money and the amplest appliances for every form of production. Cities provide advantages of great worth for certain forms of education such as cannot be found anywhere else. In the nearness of man to man, the co-operation of man with man, a million of human beings organized into the unity of a city, in many things can accomplish incomparably more than if scattered over forty or fifty thousand square miles.

But cities are the hotbed of every form of fanaticism. They are the lurking places of crime. In them power is organized for evil with the greatest ease. No means has yet been discovered for educating the entire population of a city, either intellectually or morally. Every form of evil flows into a large city, and successfully defies the enthusiasm of the schoolmaster, the appeals of the teacher of divine truth, and the strong arm of the state. It is in cities that all the worst elements from foreign countries congregate and affiliate with that which is basest and most unprincipled of our native population. Is the prospect an encouraging one when with our present machinery of education—purely intellectual or religious—we attempt to eradicate the dangerous forces which are breeding in the dark places of these great centers of population?

Assuming it therefore to be conceded that education, in improving the mental condition of the laboring classes will increase their power or efficiency as producers, that many of them will be able to pass over into the ranks of capitalists, and thus the business of the world be augmented and the amount of products become greater, it is necessary for us to inquire into the effect of this change on the conflict of labor with capital.

The revulsions in the business world every few years, in which manufactories are closed, commerce lessened, and every form of industry crippled, are largely the result of an excess of production over consumption. If the demand equalled the supply, if products were consumed as rapidly as they are cre-

ated, men would not be thrown out of employment and the enginery of production silenced. Will not education enhance the evil which is so sad in our present experience and alarming in the outlook for the future? Unquestionably production in some form will keep pace with scholarship; nothing feels the quickening of the mental life sooner than the arts. Indeed civilization finds its expression with great accuracy in the industrial arts. The machinery and appliances of material production are not only a manifestation of the character of our civilization, but they measure it.

One of the saddest wails which fall upon our ears comes up from the thousands who tell us they are thrown out of employment by labor saving machinery. The individual man is coming to be of small account in the industries of the world. More and more does machinery banish human muscles from the work shop. The child can now do what the able-bodied man could not so well do a few years ago; and half a score of men only are needed to turn out the work a hundred laborers could scarcely accomplish within the memory of many now living. The more nearly universal education becomes the more rapidly will labor-saving machines be invented, and the more perfect will they be. If the cry is over-production to-day, what will it be in a few years?

Physical science has come to be preeminently the field of thought. No other age bears any comparison with the present in the number and importance of the discoveries of the principles and forces of nature. These forces are pressed into the arts. On every hand inventions are made to utilize them, and it does not take many revolutions of the earth on its axis to make a relative advancement which in the days of our fathers would require a century of time. Will not the markets in the future be flooded as they never yet have been?

In considering this subject we should not lose sight of the fact to which we have before adverted that indolence is found very largely in the ranks of the illiterate. We must bear in mind that they have less stimulus to labor because less capable;

that they lack the ambition which is found on a higher social plane; and that among them there is more commonly a prostitution of the moral powers through intemperance and other forms of vice. Somewhat in the ratio that this class shall be educated will more labor be performed, and productions still further augmented.

It would seem that at last wars must come to an end. The nations shall "beat their swords into ploughshares and their spears into pruning hooks." Armies, whether in war or in peace, represent so much power withdrawn from productive industry; they belong purely to the class of consumers. A few figures will give us some idea of the amount consumed in war without any corresponding production. The United States has a war debt, but fortunately no great standing army. But in Europe the policy, if not the necessities, of the nations who have parceled out the territory and now hold the same by force of arms is quite otherwise. The military force of Europe, in the army and navy, includes nearly 3,000,000 of men, saying nothing of contingents. Her national debt amounts to some \$18,000,000,000. The annual revenue of all these countries is given at \$1,725,000,000. It requires \$1,400,000,000 to support these armies and pay interest on war debts, leaving only \$325,000,000 for the civil service. Thus more than four-fifths of the revenue of Europe is consumed on military operations. For over twenty years we have been devoting a considerable portion of our revenue to the payment of our enormous war debt, with a good deal of it yet remaining.

If wars should come to a perpetual end large masses of men who now consume but do not produce, who in the nature of their profession not only engage in personal consumption but often to an enormous extent in actual destruction of capital, will become producers, thus augmenting the products of the world as compared with the consumption of the same, giving, it would seem, a larger overplus of products than now exists. Will not greater industry and exclusive devotion to peaceful arts plunge us into greater perils even than we have as yet passed through?

As bearing on the same side of the argument we should call attention to the fact that there is a vast amount of consumption which does not reappear in capability for industry—it does not generate physical power, or mental energy, or disposition to labor, but rather does it produce an incapacity for labor and a spirit of idleness. We refer to the consumption of alcoholic beverages, opium, etc. If all of this were saved by producing in place thereof that which is useful in the arts, would not the equilibrium of production and consumption be still more greatly disturbed? Will not moral education so far as it is controlling, by increasing production and decreasing consumption, lead directly to a condition of enforced idleness, or an overstocking of the market to be followed by idleness? What will be the state of the industrial world when all men are peaceful, industrious, and educated so that skill shall be greatly increased, and labor-saving machinery shall more largely do the work heretofore performed by human muscles and the strength of domestic animals?

SECTION XII.

EDUCATION AND THE LABOR PROBLEM. (*Concluded.*)

Two reflections are suggested by these inquiries.

1. In a moral, peaceful society, while production will be greater, consumption also will be increased, and profitably increased in the generation of greater capability of labor. The man who consumes \$500 in drink and thereby grows poor, ought to consume \$10,000 in some other way and grow rich thereby. That drunkard's farm is without barn, or stock, or fences, or sufficient agricultural implements; his family are in rags, his children are not in school. There are no books or papers for daily reading. Now if the direction of consumption were changed he might give employment to the carpenter, to the machinist, to the clothier, to the tailor, to the shoemaker.

By employing these various trades they are made more prosperous while at the same time he gains wealth. It is evident that the prosperity of a country is measured not simply by the producing power employed, but by the extent of consumption when that consumption is rational—in other words when it feeds the mental life and supports the physical. The great evil of to-day is not that we produce too much—we do not produce enough; but that we consume unwisely and destructively, not wisely and productively as we should do. All consumption should be productive, and then all productions will find a ready market.

2. With wise and rational consumption the number of hours of labor can be reduced without harm to industrial interests. Eight hours a day in such a state of society will be better for the capitalist than ten hours under the present order; and with such a system of consumption the laborer will support his family better on eight hours of earnings than on ten hours with the spirit and methods which now prevail. It cannot be that God's plan of employing the race involved exhausting toil of the larger proportion of the human family for ten or twelve hours of each day through life. The corrective to apply to the unfortunate order of movement as now existing is surely educational and moral. Neither alone will wholly remove the evils under which we are now suffering. As the support of the physical being cannot be a final end of our activities, but we are here for intellectual and moral purposes, it is reasonable to suppose that when our relations are perfectly adjusted, and we labor with right motives and for right ends, physical support ought to be secured with less than eight hours devoted—either in labor or business—to the creation of material products. In some way our mental life should receive a much larger share of attention than is ordinarily given to it.

The question we are considering is not purely an intellectual problem, but to a considerable extent a moral problem. And if with our increasing facilities for material production there should be a corresponding improvement in the moral life—in the aims of our life, in rational ends for which we labor, less of

that which debases and more of that which elevates, I believe we would finally reach a state in which not only would it be safe for the laboring man to have his time of daily work reduced to eight hours, but even to six hours—the world not growing poorer but even richer in the industrial arts, while at the same time the race would ascend to a higher plane of scholarship and mental power.

The most favorable condition in the social and industrial life is that in which each man dwells in his own house located on land held in fee-simple, and is his own employer. For the best results there needs to be the largest measure of personal interest in the success of the work done, the responsibility for the same being supported by that which stimulates to the greatest watchfulness and most untiring industry. We have seen that slavery in which property cannot be acquired or wages earned is at the farthest remove from this state. Surely when man has no ownership of his muscles, his time, or his intellect, nothing can be gained as the fruit of labor, hence every motive for industry is gone, and everything tends to idleness. Somewhat better than this, but furnishing only slight stimulus to industry, is that relation of capital to labor in which the latter is at the mercy of the former, the laborer having but little voice in determining the wages allowed. When capital is king, labor crawls in the dust.

Is there such a thing as democracy of business? Can labor and capital form a copartnership of interest? In the nature of the case can such relations be established between them that labor will reap a reward in proportion to the service rendered? Can it obtain with capital an equal voice in the management of the joint interests of capital and labor?

The favorite channel through which to secure the end thus sought, at the present time, is organization. Laboring men are called upon to organize so as to act as a unit. Individuality is thus reduced to a minimum; it is the movement of the mass, an industrial phalanx bearing down on the opposition, on the principle that "in union there is strength," It is evident that

through organization desirable ends of a public character can often be most successfully reached, and also wrongs made more potent. It is certain that temptations to usurp authority are in proportion to the power possessed. Within the last two or three years interference with freedom of business and employment through organized agencies has been alarmingly frequent. Such interference is in conflict with right; and that it can be practiced with impunity indicates disorder in the social life, and incompleteness, if not weakness, in the provisions by which individual interests are protected.

It cannot be denied that great good has been accomplished by employing the principle of association. Agricultural and mechanical fairs have contributed to the education of farmers and mechanics. Many of the granges have been a sort of college in the improvement of their members through the essays read and the intelligent discussions with which various scientific questions and practical interests have been treated. In the deliberative gatherings of the Knights of Labor and other allied associations there is an intellectual awakening, knowledge is imparted and gained; there is a broadening of views, and as a rule the outcome is a nobler and stronger manhood. With incidental evils there is yet the lifting up of the laboring classes to a higher plane of personal life, as well as the gaining of efficiency in industrial pursuits.

The removal of the conflict between labor and capital is now mainly sought through co-operation. The two classes, employers and employes, are to be merged into one. Every laborer is to have a voice in the management of the industry to which his strength is given. Mr. Powderly said to the convention of workingmen at Richmond, a short time since, that if the business of the country were turned over to them they could not manage it because of a lack of education; that with the most of them there is the absence of intelligence needed for the successful management of the industries of the land. It is a fact of history that co-operative movements have been largely failures. This should have been expected when in the hands of men who were

without experience. And it is doubtful whether "in a multitude of counsellors there is wisdom" in business ventures. But will not practical ability be gained by experience, for there is knowledge and skill which can be obtained in no other way. We are disposed to think that in the co-operative tendency there is promise of better days. There will thus be a merging of interests which removes conflict. There will be the gaining of knowledge which widens the range of intelligence. Men will labor more industriously and thoughtfully when they reap direct benefit from the work performed; and in this there is a reactive educational force.

But when the most is done that can be done through co-operation, and even after a long period of time, the labor problem will not be wholly solved. Some men—to say nothing of the large class of laboring women—will still be only laborers, with no voice in the management of industrial affairs. Many of these do not possess capacity for business. Misfortunes of various kinds will be sure to reduce others to the ranks of simply working men. The aged and the young will not find it possible to be in the tide of co-operative movements.

We reach the following conclusions in the study of this subject: Education is not a panacea for the evils of the industrial world. But it can accomplish much. The money expended to promote intellectual culture by the state, by churches, by individuals, is not capital sunk, but it reappears in the increased capital of the world, and in the physical comforts of the people, so far as they put themselves in the way of receiving such comforts. Education will add to the capital of the country and improve the condition of workingmen. Associations for comparison of views, discussion of industrial questions, and, to a considerable extent, for co-operation, will exert a reactive educational influence which in the future will come into service for the bettering of the financial condition of the people. Aside from intellectual culture and business training there must be the fullest co-operation of moral forces in the interest of production and consumption both. But with all we can do he is a

dreamer who is looking for the speedy coming of the industrial millennium.

SECTION XIII.

THE SCHOOL SYSTEM OF MICHIGAN.

There are in this state, aside from benevolent educational institutions intended for the unfortunate, the following classes of schools, namely, the public schools—graded and ungraded—the Normal school, the Agricultural College, the State University, Church Colleges, and schools of a lower grade under the management of some of the religious bodies. Does each class have an independent existence, or has Michigan a great school system in which the unit embraces all secular schools from the primary ungraded school up to the State University? Is there any organic relation between the Public Schools and the University? In constructing the public school system was it intended to make the schools thus provided feeders to the University—their purpose realized only as the University completed the work they had begun? These last two questions we answer in the negative. In the legislation of this state the public schools comprise the whole of a system, they are not planned for the purpose of supplying feeders for any other schools; if they become feeders it is not that they were framed for that purpose, but that they, in their independent life, inspire pupils to seek for educational advantages they themselves do not supply. They can only become feeders as on the state side the University, acting independently, throws open its doors to the pupils from these schools, and on some conditions, accepts the work done therein as preparation for more advanced work which the University proposes to do. Upon the same principle and in the same way may Church Colleges take pupils from the High Schools. Under the plan and aim of the public schools, these schools look forward and up to the Church Colleges to complete the work they have begun precisely in the same way that they look forward to the University. The State in provid-

ing a University did not intend to supplant or discourage the founding of Church Colleges; it did not even intend to become a competitor, bidding against them for pupils. There was no purpose of antagonism or rivalry. But the state felt it ought not to leave all the burden of higher education on the churches; as education is a benefit to the state, the state ought to contribute of its means for the support of education. Therefore if there are young men and women, whether pursuing their studies in the High Schools or elsewhere, who seek a liberal education, the state offers advantages such as are needed. Some young people prefer to prosecute their studies in state colleges, others in church colleges; and the state, under any statute enacted, has never intended to express an opinion as to whether state or church colleges are to be preferred. All educational institutions are a unit in the sense of being engaged in a common work, and in the further sense that each domain of truth is an essential part of the great universe of truth; and that hence the work of the lower schools is a preparation for the work of the higher schools, whether carried forward by the state, by individuals, or by churches. Therefore, in all the legislation in behalf of education in this state no organic bonds are imposed; the Public School System is one thing, the University is another, the Church Colleges another, and the Normal School is still another. The Normal School has a more direct connection with the public schools than any of the rest, not as an institution into which the pupils of the public schools shall graduate, but as acting in the opposite direction of fitting teachers to carry forward the work of the public schools.

The state puts all colleges on the same plane, in no way discriminating between them, making but one stipulation, that the extent and quality of work done shall not be below the standard set up in her own University. This provision ought to be rigidly enforced. No institution should be allowed to grant degrees on the basis of a more limited scholarship than is guaranteed in the completion of a strong four years' preparatory course and a four years' college course according to the work of our best institu-

tions of learning. Albion requests the teachers of this state to closely inspect her methods and the quality and extent of the work performed.

SECTION XIV.

THE UNIVERSITY IDEA.

It is proposed as rapidly as possible to develop Albion College into a university. In making this statement we do not wish it understood that we are planning to associate with the college the ordinary professional schools. Offers in this direction have already been made which we have not entertained. But we do desire to build up an institution offering special advantages for study and research far beyond the scope of the ordinary college curriculum. A collection of schools in one corporation does not give us a university in any proper sense of the word, unless the unity is progressive—a gradation from the college up through post-graduate schools. It is a misnomer to call an institution a university when the aggregation of schools is not in the interest of higher learning; when the schools added to complete the university organization admit students without graduation from college, even at a point in scholarship too low for admission to the Freshman Class. Scholarship, progressive, successive, in passing from one school to another, proceeding from the lower to the higher—not merely from one kind of intellectual work to another—in this do we find the true university idea.

Albion College now presents several lines of work which are not common to ordinary colleges. It has introduced wide elections, covering considerably more than one-half of all the work done. In the elections provided for it opens up special channels of study of indefinite extent.

It is making research work—some of it original and some of it carried forward on the basis of extended authorities—a prominent feature of its movements. The additions to the library are only in small part for promiscuous reading; they are princi-

pally made with a view of supplying the highest authorities and best helps for the most exhaustive study. Arrangements are made for post-graduate study and research.

It is confidently expected that special provision, on an extended scale, will soon be made for technological study.

In our idea university work does not mean a mingling of the scholastic and professional, in which that which gives the name university is on the lowest plane of scholarship, but a progressive unity and continuity of ascent from the College of Liberal Arts up to higher spheres of learning and culture.

SECTION XV.

IN WHAT SENSE IS ALBION COLLEGE A CHURCH SCHOOL?

It was founded by the Church.

It is under the control of the Church.

The majority of the Board of Trustees—twelve members of the fifteen—are appointed by the Detroit and Michigan Conferences. The Trustees make an annual report to these Conferences of the condition, wants, and work of the institution.

These Conferences appoint Visitors to the College; who are required to report to the appointing bodies the result of their inspection of the workings of this school of learning.

Each of these Conferences is represented on the Centenary Board of Managers by fourteen persons—seven ministers and seven laymen—who hold a meeting annually to advise with the Trustees in regard to the interests of the institution.

But it is not a theological school; it is an institution for general learning and culture.

Its government and spirit are religious, but it imposes no sectarian test.

It requires attendance of students upon the daily religious chapel exercises, but these exercises are spiritual and in no sense sectarian.

All the students must attend church each Sabbath morning, but their church preferences are respected, and they select their place of worship without any dictation or advice from college authorities.

But while every student has the same religious freedom as at his home and in the community where he resides, all instruction is from a theistic standpoint, and no science or philosophy is considered to be complete which does not have its roots in, and spring forth from, the divine Infinite Intelligence. Science, as a system capable of being understood, cannot exist apart from God. In God's nature we have the explanation of all science, and the ground, indeed the whole of all genuine philosophy. We do not teach science as one thing and theism as another, but theism as the basis of, the producing cause, the reason for, the most important factor, the very heart of, science. That philosophy is incomplete, and hence fatally erroneous, which does not begin with infinite intelligence.

In the entire range of agnosticism there is not a whole truth. Not a law in science, not a principle in philosophy, not a fact in nature but is robbed of some portion of its meaning by leaving God out of the problem of being. The question is not whether it is proper to teach science or truth of any kind in disregard of God as its source, but is there science or truth without a God? Is not the beginning and support of all truth divine? Is not he an impostor who brings you for truth, in any domain, that which has no God in it? Is it not a first principle in philosophy that the conditioned is utterly meaningless without the unconditioned, that you cannot take one step in the temple of truth without starting from God's throne; that you cannot even enter this temple only as God is the doorway.

No college is true to the college idea that is either theoretically or practically agnostic. That all nature is built up into systems no one thinks of disputing. That systems can be formed without being the work of intelligence is a proposition too preposterous to call for discussion. Colleges that allow agnostic teachings, that never inquire into the source of nature, which

assume that the beginning of nature is in nature itself; that accustom the student to ignore divine intelligence in the explanation of things, are doing more harm than can easily be comprehended. It is a crime against truth thus to throw it into orphanage, to rob it of its paternity and make its life a riddle of which there is no solution. Human intelligence in the most emphatic terms must reject any system that discards final causes, which ignores aims and purposes in dealing with the problem of being. Is not the claim that truth is taught, when the leading factor is repudiated, entitled to no better appellation than charlatanism?

Albion College does not teach sectarianism, but it does teach God in every lecture-room and on every occasion. It does more than this. It takes into the account the fact that its whole work has for its object the culture of spiritual beings; that man is more than intellect, that he possesses relations to the Infinite Soul; and no college, it affirms, has a right to carry forward its work in such a way as to sever the creature from the Creator, either in the forms of thought, and truth as the product of thought, or in the supply of the spiritual nourishment the life must obtain to reach the highest development of manhood. Colleges ought to make men, not scholars only. And that the loftiest and fullest manhood can be attained without God to rest upon, and God consciously touching every fiber of the soul, in the nature of the case cannot be true.

SECTION XVI.

CHARACTER THE SUPREME END OF EDUCATION.

The principle that would restrict the end of college work to scholarship is exceedingly pernicious. The race ought to have power, but it should be taught to use that power in the interest of virtue and humanity. The best scholarship even can be gained only as the mind is under moral restraints, and is in love with that which is pure. But the schools should look farther

than this. Scholarship should be made a means, not an end. The end should be character, broad, honest, pure, magnanimous, with the passions repressed, and conscience on the throne; and with knowledge all through the years of school and college life should come the noblest and purest principles of morality. No one has a right to divorce that which feeds the intellect from that which builds up manly character. God never intended that the intellectual life should part company with the moral life. The union should be continuous and eternal. When God said, "Let us make man in our image and after our likeness," the ideal was immeasurably higher than mere intellectuality, it was to be a Godlike intellectuality, a character in which power and moral truth should be in perpetual unity.

SECTION XVII.

DEPENDENCE OF RELIGION ON EDUCATION.

The two factors of religion are worship and service. Both of these depend on our intellectual powers. The brute cannot adore God for he cannot conceive of a God, there is no apprehension of the nature of God. Man can worship because he can know. To him God is an infinite being—of all power, wisdom, justice and mercy—hence he looks up to him, with awe he appears before him, with confidence he accepts his instruction, and in return for infinite love he gives unto him the affections of his heart. The trouble with the uneducated is that their conceptions of God are crude. But when man comes to look at him in his wondrous providence, studies nature in its magnitudes, and in its minute forms and operations, gazes upon God from the summit of this mighty universe, every world of which, energized by myriads of forces, is guided by a single will; when with the eye of illuminated intelligence he sweeps over the geological epochs of the millions of years of our planet, and finds a single will presiding from the beginning up to the present moment; when he surveys the history of man in the

nations of the earth and discovers that above all the fierce struggles and plottings and deep-laid plans, there has been a power that curbed the ambitions of the race, that around it all was the arm of infinite restraint, thus finding his way into God's great workshop and understanding his purposes, with broader vision and profounder emotions he lifts up his soul to the King of Kings, and his religious nature is stirred in depth and breadth far beyond that which is possible to any uneducated mind. With such a person religion is more than emotion, it is the lifting up of the grandly developed intellectual and moral life, by rational faith and knowledge taking hold upon the majesty of all worlds. The stability of the religious life depends on the intelligence of the worshiper. To love rationally we must have knowledge. And the service of God does not consist of emotion, but obedience to divine commands; fidelity to the claims of righteous government; co-operation with the infinite will; the working out in our lives the plans made by our Heavenly Father. To do all this most fully does not the mind need the most complete enlightenment of knowledge, the clearest and most reliable intellectual vision? The hope of the church, to a considerable extent, is centered in the rational education of the people.

SECTION XVIII.

MUSIC IN THE SCHOOLS.

The school, whether of lower or higher grade, is an intellectual arena. It is established to give an opportunity for successful study. The faculties of cognition need development, and development depends on the observance of law, definite order in the use of these faculties, together with the vigorous employment of the powers of thought. Colleges are presumed to supply the most favorable conditions for mental activity. But it must be remembered that the intellect is only one of the departments of mind, the sensibility and will are intimately asso-

ciated with the intellect, and may not be left out of a rational scheme of mental culture. It comes in our way just here to speak only of the attention that should be given to the sensibility. If the domain of feelings should be utterly disregarded the human being would be a monster. There is nothing that takes hold upon the heart, and hence influences our being, more than music. It can be made the source of the purest joy of which the race is capable, adding richness to life, causing the fountains of humanity to flow with increasing gladness. In the complete man the heart must receive as much attention as the head. For the purpose of securing symmetry of culture, therefore, music should have a place in every college. Graduates will go forth better qualified to discharge the duties of the oncoming years. Instrumental and vocal music both will contribute to this end. And then voice culture trains the organs of speech; it is largely a preventive of pulmonary disease, and prepares the vocal organs for the best work in public speaking. That our colleges may be in the fullest degree practical they should give instruction in music.

SECTION XIX.

WHAT CLASSES OF PERSONS TO BE BENEFITED BY ALBION COLLEGE.

The college does not exist for the education of any one class alone. It expects to prepare young people for the ministry, for the legal and medical professions, for teaching, for journalism, for statesmanship, for all the forms of legitimate business, and for intelligent citizenship. It does not aim to make ministers, it aims to make christian scholars, leaving to the young people the fullest freedom in the choice of a profession. But it seeks to surround itself with an atmosphere so eminently spiritual that they whom God calls to the ministry will be inclined to listen to the divine call; and that they who go forth to practice law or medicine, to enter the teachers' profession, or any other avo-

cation in life will, theoretically at least, and we trust practically, carry Christ with them. The world can get along without agnostic statesmen, teachers, lawyers, citizens, etc., but it cannot get along without christianity running through all the thoughts and plans of the people; and it is a fearful wrong when any college practically works Christ out of the lines of human thinking and human living, especially when it banishes christianity from the sphere of liberal culture. Albion College guarantees the fullest freedom in religious opinions; but to promote morality and secure symmetrical development of the entire mental being, it keeps the wants of the spiritual life, and the fact that the key of final destiny is a spiritual key, always in mind. To train the intellect away from God, to lead it to dwell in a world without God, would be a fearful product of college plans. The pinnacle of knowledge should be nearest heaven. In deciding upon the religious healthfulness of an institution of learning it is not enough to know the percentage of religious students entering such a college, but the religious trend of the school itself. Does it practically help the student to come nearer to Christ, or does it set in motion a counter tide, supplying forces that work for skepticism?

The graduates of Albion College find their way into all of the professions. Some enter the ministry, some take up teaching, others turn to the law, all of them we hope carry with them an enlightened christian conscience into whatever vocation in life they select.

SECTION XX.

THE COLLEGE SPIRIT.

The motto of each student should be—not rapidity of work, but—thoroughness, absolute mastery of every branch pursued.

To gain a habit of thoroughness so that it will be wholly natural, an irresistible tendency, is the highest attainment of college years, the supreme good of college acquisitions. This

is worth to a young man or woman much more than all the information acquired. It is power, power which will be crowned with success in whatever direction employed.

Haste to enter a profession or engage in business, treating the years of earnest study as time lost, is a disease of the present century, which is strewing the pathway of life with myriads of intellectual wrecks. The mighty men are they who withdraw from the world for a period of time, and plunge into the ocean of truth, with no distracting cares, forgetful of pleasure, digging deep and broad, and laying foundations for the temple of greatness to be reared in subsequent years.

During the prosecution of the college course but little time should be given to desultory reading, or reading which does not bear directly on the branches studied. Many young people fail to realize any large measure of good because of the mental dissipation which grows out of scattering intellectual methods. Concentration of energies persistently adhered to, is essential to success.

Too much of social life is not unfrequently the grave of high intellectual aspirations during college days. An institution of learning is not the place where young men and women can profitably spend much time in each other's society. When this form of social life exists, failure in scholarship is the inevitable result. No young man is great enough to rise to the highest eminence when heart and time are given to social enjoyment.

Every student should be present at the first exercise of the term, and start out with the living conviction that a single failure is unwise, as it is a sacrifice of privilege and a curtailment of strength. The benefit from study is in the studying. Graduation gives no power, the power is gained in the daily mastery of subjects assigned for thought. In the personal solution of the great problems of truth the mind grows and reaches up toward the lofty altitude of which its powers are capable. Credit for doing is worthless, the benefit is in the doing.

Colleges do not make men; they make themselves by using the opportunities colleges put within their reach.

*SECTION XXI.**COLLEGE ENDOWMENTS AND APPLIANCES.*

Various objects may be embraced in college endowments. (a) The money contributed may be put into a general fund, without restriction, the interest from the same being used for current expenses. Endowments are very largely of this class.

(b) Or special professorships may be endowed, the income from such funds being devoted exclusively to the support of the chairs designated. Often the names of donors are attached to these chairs.

(c) In some cases a special interest, like the library, is endowed. The income from \$50,000, set apart for the purpose, would give the library of a college a constant growth, and sufficiently rapid to procure in a few years, all the more valuable contributions in the different channels of thought, and thereafter add all important new publications.

(d) Within the last twenty-five years many institutions have been greatly aided in their work by the contribution of money for the erection of needed buildings—such as Halls of Science, Library Buildings, Halls for general use, etc. These buildings usually bear the name of the benefactor.

*SECTION XXII.**PRACTICABLE METHODS OF ENDOWING COLLEGES.*

(a) The first method which should be mentioned is the direct contribution of money for this end. This is always gratefully received by the colleges thus remembered. Many persons who desire to aid in educating the world, especially to aid in enlarging the sweep and power of christian education, prefer to give their money for this purpose before they die, that they may be permitted personally to see the fruits of their liberality. They

also feel, perhaps, that the cause of christian education cannot wait. The sooner the money is put into this work the greater will be its power for good.

(b) There are others who cannot well spare any large sums from their business, and therefore prefer to make provision for institutions of learning in their wills. If every Methodist in Michigan would insert in his will something for Albion College, according to his ability, from twenty-five dollars up to the thousands which the more wealthy could give, the church in this state would finally reap a grand harvest in influence and power growing out of the education of its ministry and laity.

(c) There are others still who not having large sums to contribute at the present, nor any large amounts to put in a will, have conceived the plan of insuring their lives for the benefit of an institution of learning. Thus each year paying out a comparatively small sum, they take satisfaction in the thought that, by and by, the college will come into possession of \$1,000, or \$5,000, or it may be \$20,000 or \$30,000. This provision is made without crippling the business in which they are engaged.

Thus it would seem that the way is open for every one who loves the cause of Christ, and who desires to show his love for the gospel of human elevation, which has done so much for him, to help swell the stream of christian life and power that is finally to take the world for the blessed Master.

PART II.

EDUCATIONAL METHODS.

SECTION I.

THE THREE GENERAL MODES OF INSTRUCTION.

1. Instruction from a text book.
2. Instruction by lectures.
3. Instruction through research work.

The first is least difficult for the instructor, and is the method commonly adopted in teaching many branches. It gives the pupil opportunity for deliberate and painstaking study. The work is performed largely before the hour of recitation, and the work belongs to the student rather than to the instructor. To get the best results three conditions must be supplied. (1.) The text book must give an adequate and luminous treatment of the subjects considered. Satisfactory text books are by no means common. (2.) The teacher must understand that he has something more to do than simply determine whether the student has learned the lesson assigned from the book. He must be a teacher, not do the thinking for the pupil, nor merely make that which is abstruse plain, but specially to guide the student in working out the problem of each lesson. The teacher is successful when he inspires the pupil to do the work, not by doing it for him. (3.) There must be an awakening of interest in the subject the student is pursuing. Some teachers possess the power to inspire in a remarkable degree, while others fail just at this point.

The second mode of instruction in our enumeration is by lectures. The student listens to the lectures given, takes notes, and subsequently submits to a quiz. There is no previous study of the subject, the student has no time for special deliberation; he must move forward with the lecturer, and there is danger that points more or less important will elude his attention, or at least not arrange themselves in proper relations with each other. By this method, however, the personality of the teacher is more influential than in the former; and if he has the power of adaptation he is often able to meet wants which in no other way would be supplied. But skillful lecturers are rather the exception. Yet it should be said that this method helps to develop in the student the power and habit of attention as a listener, a kind of training which the young person should receive before finishing his college course. The lower college classes, we hold, should be taught principally by means of the text book, but in the last years lecturing may be employed with good results—yet even then it should not be adopted exclusively.

The third method is by personal research. The student does not use a text book, nor get his knowledge from lectures given by the Professor. He makes original investigations to determine truth, and perhaps new truth, or he avails himself of the different modes of treatment found in a multitude of authors, and by careful study, analysis and comparison in the midst of divergent and perhaps conflicting views, reaches conclusions of his own. Sometimes a particular book is reported upon in its relations to the general subject as discussed by different authors. Indeed the methods are flexible and may be widely varied. But whatever mode is employed the conclusion reached by the student is not dictated by a single author nor secured by the personal influence of the teacher; it is the result of the many-sided study of the question under consideration. This is the method of work of intelligent men and scholars after they leave college.

SECTION II.

THE MANUAL FACTOR OF SCHOOL WORK.

By this we mean, drawing, sketching, blackboard and written exercises. Every student should be taught to perform his work in a neat, clean way. The sentences formed in reciting should be carefully worded so as accurately and in good language to express the thought. Careful expression promotes careful thinking. The ability to put truth into the most fitting words is no inconsiderable part of education. But this is not the real subject we have before us, and yet is somewhat related to it. No teacher should ever allow work to be put on the blackboard in a slovenly way. In algebraic formula the figures should be plainly made, the lines straight and uniform, the equations regular, the operations compactly and carefully expressed—not sprawling all over the board. The neglect of this reacts unfavorably on mental habits. Care should be exercised in drawing diagrams, not merely for scenic effect, but to cultivate precision, and to bring the object lesson, or mode of representation, as nearly as possible into harmony with the truth involved. This rests on the principle that we should seek perfection in all our doing, and habits of mechanical accuracy are closely allied to habits of intellectual precision. The mind should have an ideal in all its work, and this ideal we should strive to realize in everything we attempt. In these days there is a great deal of written work, in daily recitations and the examinations which follow. In no case should slovenly papers be accepted. The student should not have credit for anything he does not take pains in doing. Educators are coming to realize that drawing and sketching give us valuable lines of study. It is much more than that skill in these studies is an accomplishment. Such branches discipline the attention; they train us in habits of careful observation; they bring the mind into conditions favorable to progress in science; they lead to accuracy in search for truth. It would be well for every student to acquire the ability to put on paper faithful representations of objects in every de-

partment of nature, such as geological strata, plants, animals, etc. A college course is expected to give a wide range of knowledge and a somewhat thorough intellectual culture; it should also discipline the hand for accurate representation of physical truth.

SECTION III.

LANGUAGE STUDY.

The subject of the teaching of language continues to receive the compliment of a large share of public attention. Those who are teachers in this department need to have it clearly determined what is set before them as the work they are expected to do. It would seem that under the circumstances the question should be its own answer. It certainly is not, that the whole field of language is to be covered in the college class room. But the one result, that clearly stands out as the one demanded is, that the learner shall gain ability to read, with some facility, the language taught. If this is secured it is accepted as meeting the demand; if not, there is complaint of failure. It is a *reading* knowledge of the language that is demanded. A *reading* knowledge here includes, of course, such a knowledge of vocabulary and grammar as will well serve the *purpose* of a *reading* knowledge. If a professional linguist or philologist is in embryo anywhere in the classes, he is at just the work he should be. He is learning the *language*, and laying good foundation for his future specialty. He will, however, inevitably accumulate a good store of the elements of his specialty as he goes along.

The alleged fact at which the gibes are hurled is, that the average college graduate cannot, without difficulty, and much help from the lexicon, read his Homer, or Sophocles, or Plato; it is not that he is not ready at Latin and Greek Prose. Charles Francis Adams stood up before the Phi Beta Kappa Fraternity and laughed at himself, and it was for this: he had been through

college and could not readily read his Homer or Demosthenes. It was not that he could not converse in Latin or write Greek prose.

Now, amid such happenings, teachers of language ought to be sure that they are not put on the defense for anything for which they do not undertake to be responsible, and they ought not to make themselves responsible for anything which they cannot defend. But is not this latter responsibility the very one they have been assuming? It would clearly seem so from the nature of the prevailing criticisms of the methods of teaching language, and from the demand for a change. The criticisms and the demand have come, not entirely from the directly partisan opponents of language study, but, in many cases, from teachers of language, and those who are eminent in the profession. Why such an outcry has not been generally heeded, and language teaching everywhere put upon a more rational basis is a mystery. The fact has, however, been adduced as a striking illustration of the paralyzing effect of the methods complained of. The characteristics of these methods are said to be, that they follow the difficult instead of the easy way; the round-about instead of the direct way; that they tend to create a distaste, instead of a fondness for language study, and that their natural result is to sterilize and dwarf, instead of fertilize and develop the intellect. They give the learner hard work to do, instead of language to learn; dry classifications to struggle with, instead of language to be familiar with. The learner expects to make a new acquaintance that shall take him by the hand and talk with him in human speech; instead of this, the pieces of a skeleton are handed to him, one after another, and he is told to fit them together and make an image in the hope that it may talk—after five or six years.

And all this is said to be "mental discipline." "It is not mental discipline," say the opponents. "It is mental drudgery." Work is not a desirable thing in itself, but only for its results, and, then, only when the best results are secured for the least amount of work. Beyond this, all is waste power, and the toil

of slaves. So say the incessant clickings, and ringing hammers, and buzzing spindles, and thundering wheels of labor-saving machinery. And we must teach so as to secure the best results for the least amount of labor, or this age of labor-saving machinery will leave us stranded high and dry while it moves on in its splendid achievements."

SECTION IV.

LANGUAGE STUDY—Concluded.

The course to be pursued in carrying out the ideas presented in the foregoing section is clearly indicated to be the very opposite to that so severely reprobated; to come, namely, by the most direct way to a knowledge of the language; to make the acquisition of the language as easy as possible, and, as a consequence, to make it a delight to the student. The particular operations of the class-room must largely depend upon the personality of the teacher. Definite statements of method to be invariably followed cannot be successfully insisted upon. But the teacher will, very likely, find himself quite irresistibly drawn to introduce the student early to a large amount of reading; to talk about that reading in such a way that the explanation of its meaning will bring out the facts of etymology without a resort, at the very outset, to the tedious processes of declension and conjugation; and to bring out the parts of syntax without a similar tedious resort to the process of telling off dry rules *ad nauseam*. He will find himself leading the student, or the student leading him, (for there is all this difference in the mental attitude of the student under the two methods), to the study of roots and suffixes for the purpose of acquiring a vocabulary; and to the comparison of passage with passage for settling constructions and interpretations. So the lesson of to-day grows out of the lesson of yesterday. The lesson of to-day receives its further exemplification and development in the lesson of to-morrow. All the portions of the text

read are put into the relation with each other of an organic unity, instead of being put into a forced mechanical connection with sets of rules and paradigms outside of themselves.

It is believed that, in the above, are stated some of the features of the method of language-teaching which will satisfy the requirements of the present time. Such a method makes the ability to read the language understandingly its pronounced aim. It goes in the most direct way to reach the result. It removes from the beginning of the study the great mass of dry and technical details, postponing them to the more advanced stage, where the learner's better knowledge asks for them and finds pleasure in the mastery of them.

The principles stated above lead to another important result. The Modern Languages will be studied before the Ancient. They are easier of acquisition. They lie nearer our own, both in time and space, and are more approachable from these directions. There do not lie in the way so many and such mountainous difficulties in the shape of strange idioms and forms. They are more approachable for this reason. It is in these easier languages that the learner first becomes familiar with the idea that the same thought may be exchanged back and forth between different sets of signs; and that he acquires facility in the practice of exchanging the same thoughts between different sets of signs. Moreover, in the Modern Languages the method of early introducing the learner to a large amount of reading is accepted as natural, and the student comes up to the Ancient Languages prepared to take hold of them in the same way. The study of language thus becomes to him one consistent whole—the study of *language*.

But there is another reason why the study of the Modern Languages should precede. It is from the teeming brains and presses of Germany, and, in a lesser degree, of France, that a large part of the literature in every department of knowledge is given to the world. A student can no longer wait for the slow and diluting process of translation. He must, if these works bring to him their full value, read them in the originals. He

should be able to begin such work somewhat early in the college course. Indeed, it would be well if German and French text-books could be used in our class-rooms. It might be done, for instance, in Grammars and Lexicons at first, and, later, could be introduced in other school books. When the ability to use text books in French and in German is being so largely required in University work, it is certainly not too much to ask that, in College work, there should be a leading up to it.

It is not the least among the recommendations of the method, whose general character is indicated above, that it consistently and naturally conducts to so desirable a result. That the tendency is towards the adoption of this method, in its leading features, cannot be doubted; and equally beyond doubt is it that, with such features characterizing the teaching of language in College courses, its hold upon public confidence and favor will be greatly strengthened.

SECTION V.

UNDERSTANDING VS. MEMORY, AS RELATED TO THE TEACHING OF HISTORY.

There is a notion widely prevalent, even among teachers, that almost the only faculty employed in the acquisition of historic knowledge is memory. The average student addressing himself to historic study expects to accomplish his task, if at all, by main strength—by sheer effort of retention. If poorly endowed on the memory side, he resigns himself without effort to the belief that he can never learn history. An idea so generally accepted has doubtless some basis in fact. All acquisition of knowledge involves the exercise of memory. And the study of history involves such exercise far more than mathematics, or logic, or physics. Still, while admitting so much, no experienced teacher of history will hesitate to affirm that those who heed this maxim—teach and study history rationally, *i. e.* through the understanding—may feel pretty sure that memory will do its part of the work.

To establish this proposition it is only necessary to consider carefully the ideal nature of the subject-matter of history. What is the secret of the misconception stated above? Doubtless it is the view, more or less clearly held, that the element of contingency is present to such a degree in all human action, that reason can scarcely be said to have any share in its determination. Geometry, they say, is an *a priori* science; hence, when once the mind has been initiated, it need not depend upon memory, since the understanding will, upon careful reflection and without going out of itself, reproduce at will the principles desired. We do, indeed, find it very convenient to store up many of these principles in the shape of formulas; but such storing up is a matter of convenience, not of necessity. The same explanation applies, though not in the same fulness, to physics and astronomy. But far different is the case of man. As "the wind bloweth where it listeth," so is it with human conduct.

Now this view doubtless contains a large increment of truth; but it is almost as extreme an exaggeration of the contingent element in human history as is Buckle's philosophy of the necessary element. As a matter of fact much of man's action is determined by forces wholly external to his will, *e. g.*, climate, topography, race, heredity, etc. Further, even man's will does not usually mean caprice. That we are free does not involve that we shall follow *no* reason, but that we shall be free to choose between alternative reasons. This element of reasonableness becomes still more important when we remember that history concerns itself not with the life of individuals, but with that of society; and the life of society, in spite of occasional aberrations, is in the long run determined by the highest reason. We may, therefore, with confidence affirm that history concerns itself with a field wherein reason reigns, if not absolutely, at least with limited sovereignty.

The domain of history, exactly stated, is the rational, or causal, or inner life of communities. And here it offers one great advantage not enjoyed by the student of physical nature.

To him every phenomenon presents three sides. It is viewed (1) as a mere object of perception, (2) as involving an inner relation of causation, (3) as a particular instance of a general law. The phenomena of society also present these three aspects. But while science is more successful in the third stage, far surpassing social science in the definiteness and certainty of her laws, history, on the other hand, is far more satisfactory in the second stage, *i. e.* in the realm of causes. For, when we have presented to us the phenomenon of heat expanding metals, we mean by causation nothing more than uniform antecedence and consequence. Who knows heat save in its effects? Who, indeed, knows any physical force as having entered into its life? But how different is the study of man's life! Here the forces are human passions which are known to us in immediate consciousness; hence we have but little interest in the purely phenomenal side of an event, since we are able, nay, even are obliged to pass on at once to its causal side. So, then, to teach the so-called *fact*, *i. e.* the mere external happening, is to fail to teach the *real* fact—is to eat the shell and throw away the kernel. The history of the ideas, the motives, the passions, which have made the past—this and this alone is real history.

Nor is this to be interpreted as applying only to great historical movements—to the ideas which stamp themselves as an epoch. That the true history is the inner history, applies as perfectly to the events of a half-hour as to those of a half-century. The physical conflict of two men has interest for us not as a mere collision of two masses of flesh, but for the passions, the courage, the resolute will, which speak out through flashing eye and straining muscles. History is, so to speak, a great tapestry whose pattern, viewed at the proper distance, shows forth one dominant idea wrought out through many lesser subordinate ideas. The same intelligence permeates the forest, the tree, the branch, the leaf, the bundle of fibres, the ultimate cell.

SECTION VI.

**UNDERSTANDING VS. MEMORY, AS RELATED TO
THE TEACHING OF HISTORY—Concluded.**

We have thus tried to show that the most important principle to guide us in the study and teaching of history is this: Teach the inner, or rational, or causal history. To adequately interpret and apply this principle would fill a volume. We must, therefore, confine ourselves to three or four considerations. Do you find it difficult to secure proper interest? The principle stated above will solve the difficulty. Why do children like fiction better than history? Higginson says they do not, save as history is ill-told. What we have said of the true nature of history will, we think, show that his statement is, at least, inexact. Other things being equal, fact unquestionably *does* interest us more than fiction. But other things will persist in *not* being equal. The writer of fiction chooses that *class* of social forces which by their strength and universality at once insure interest; he so limits their *number* that this interest is not dissipated by division; and he secures their *ascendency* so fully, by the exaggeration of those forces and the belittling of all opposition, that we are borne along on their triumphal progress to such a climax of interest as history can furnish in but few instances throughout its whole course.

Nevertheless, while the historian must ever be at a disadvantage as compared with the novelist; yet he can accomplish much by learning the secret of the novelist. Let him remember that children, youth, adults, all alike care not for externals, but for the forces, passions, motives, which are at work. Choose, then, in the earlier stages of education, periods wherein the forces are strong and few, and where those forces move unhindered to glorious success. The history of Germany from 1864 to 1871 will arouse the enthusiasm of the most stolid, but the fruitless and confused struggles of 1848 and 1849 will weary the most mature and capable. Secondly, having chosen a suitable period, imitate the novelist in your treatment of it. Omit the

lesser and less common forces. Do not diminish the interest of their triumph by showing its limitations. Do not attempt to make a perfectly adequate presentation. In your efforts to tell all the truth you will fail to tell any—you will almost certainly leave a false impression. The child's views of life and all about him are too sanguine. If, then, you put in all the shadows of a historic period, he will form too bad an impression of that period, since his standard of judgment will be his own too rosy view of the world in which he lives.

Another very important application of this principle of teaching inner or force history, is the determination of the relative importance of events. The teacher exhorts the student to try to remember only the leading dates. The student replies: "How can I know what are leading dates?" The answer is easy. Those dates are leading dates which mark stages in the triumph or decline of the epoch-making idea, or, still more simply, which mark *decisive* events.

But one of the most important applications of the principle in question is to what may be called the organization of the narrative. By the organization of the narrative we mean such uncovering of the leading ideas and forces, and such setting forth of the successive stages of their beginnings, growth, culmination and decline as shall make the rational skeleton or framework stand out clear and distinct to the most ordinary understanding. "It's all mixed up to me," is a common remark with reference to a history lesson. A large part of the teacher's work is to straighten out the tangled skein. This applies alike to the events of a millennium, a century or a year. The teacher should set forth the idea which makes an epoch; but he should also endeavor to clear up the forces that determine the issues of a campaign. Wars make a great deal of trouble in the classroom; yet nothing is easier to teach than wars. They have the advantage always attaching to those events which involve the coarser passions of our common nature. But students try to learn lists of battles, generals, results, etc., by main strength, so to speak, when they ought to be using common sense, trying

to see how the campaign of necessity worked itself out as it did, and so acquiring the ability to reproduce more or less completely through the understanding that which the memory has let slip.

Many graphic devices will help in this work. The course of the revolutionary wars which filled the first years of the nineteenth century can be very effectively represented on the black-board. Let it be spaced off vertically for the years from 1792 to 1815. Take the lower quarter to represent the power and territory of France; the upper three-fourths that of Continental Europe. Use a line of blue, say, to mark the French side of the boundary; a line of yellow to mark the side of her enemies. With every decisive conflict the lines will sway up or down. As French victories more and more preponderate, the blue pushes upwards by great bounds, the yellow recedes as rapidly, till almost all Europe is swallowed up. Then comes the fatal Russian campaign. Down goes the insubstantial fabric in two or three stages of swift and deep descent. After Napoleon's return from Elba, the blue recovers itself an instant, then, by the second treaty of Paris, drops back almost to the position of 1790. Another line of *red* may be introduced to show the meteor-like ascent of Napoleon. Mounting in '95, '96 and '97, by swift strides, this line becomes in '99 coincident with that of France, and so remains for fourteen years. After the first treaty of Paris it disappears for a moment. The return from Elba makes the two lines again coincident. But with the overthrow at Waterloo the red rushes downward into night and oblivion.

The periods involving great territorial changes, such as the unification of Italy or Germany, furnish a ready-made skeleton. Of course these changes are not the true inner history. The idea of Nationality is the epoch-making one in the cases cited. But that idea is symbolized in the most natural and striking manner by the external changes.

But this discussion has already consumed more than the allotted space. Perhaps it will be renewed, and the special application of the principle to the Rational Teaching of Chronology considered in another Year-Book.

SECTION VII.

THE OLD METHOD OF TEACHING THE NATURAL SCIENCES.

The question, whether the sciences have an equal value with other branches as educational agents, receives a far different answer in these days from that given a generation ago. At that time the answer was an emphatic negative, and science was accorded scarcely a place in the curriculum of the schools. Afterwards by a slow change in public opinion a place was grudgingly given to some of the sciences, but not then for purposes of discipline or culture, but rather because the utilitarian spirit of the times demanded that the student should know some of the common facts of every-day life. Later on the truth of the ever memorable Baconian doctrine was granted, that "man is the interpreter of Nature and Science its right interpretation," since which time the study of nature and natural phenomena is rapidly extending and constantly vindicating its claim upon the mental cultivation of the age.

Our times are not without notable concessions to the fact that in many respects the discipline obtained from the study of the sciences, though differing in kind, is quite as important as that obtained from the classics. The Johns Hopkins University granting the B. A. degree on a course in which no Greek is required, and Harvard with its very limited requirements in the same direction, would seem to be authority high enough to give the opinion great respectability, to say the least.

That there is a difference in the quality of the culture obtained in the two courses all must admit; a certain subtle refinement of ideas, a keen discrimination and appreciation of thought differences, of verbal details, a facility (an over-facility we have sometimes thought) in the use of language, marks the classically educated man so plainly that one can almost invariably select the man thus cultured from others. On the other hand there is that practical, pointed, terse, forcefully expressive

manner in the man who has truly caught the scientific spirit which makes it equally easy to distinguish him.

What the symmetrically educated man needs is the combined culture that is to be obtained from a judicious mingling of both these lines of study.

We have alluded to this, not for the purposes of discussion but simply that it might lead the way to another question connected with the subject, namely, Why has this question ever been a debatable one?

First, we repeat, not because of a lack of intrinsic value contained in the study of the sciences, but for several other reasons, from among which we will mention three.

1. Because the object or aim of the study was not to give the student real culture or discipline, but simply that he might gain a smattering of scientific facts of an interesting and somewhat practical nature. The old saying that knowledge is power has received a sorry illustration in the knowledge obtained by the careful but tedious cataloguing of the facts of science which constituted the whole of the scientific training of a few years ago.

It may be proper to stop here and inquire, What is the object of science study? Two answers may be made to this: (1) To acquire a knowledge of facts and principles which find their application in many ways in our every-day life; and (2) as a means of developing and training some of the most important faculties of the mind; that is to say, according to the former the aim of such study is to furnish material knowledge and give the student a certain amount of practical training for making that knowledge effective in business life; the latter idea is to supply a general intellectual training so as to fit students to acquire knowledge for themselves; or as Prof. Lesley tersely puts it, "We may ask the question how much we know, but a better question is how we got what we know, and what we can do with it, and above all what it has made of us."

The advocates of the old classical course would certainly claim the latter reason to be the all-important one, and we are sure we voice the opinion of the majority of scientists when we

say that intellectual training, and not the mere accumulation of facts, ought to be held always as the prime object of science teaching.

The physical sciences must often be taught from the first point of view; for certainly if we claim that no man may be regarded as thoroughly educated while still ignorant of the history of Greece and Rome, we also insist that his education is sadly deficient if he does not understand the underlying principles of the steam engine, the telephone, and the telegraph. Still the motto and spirit of the present system is well stated by President Eliot when he says, "The fruit of liberal education is not learning, but the capacity and desire to learn, not knowledge but power."

2. The question of the relative value of the classics and sciences has been a debatable one because under but few circumstances have they been tried when both have had the same amount of time bestowed upon them. The old classical course gave eight years to the study of Latin and six or seven to the study of Greek, these two branches occupying two-thirds of the time of the student. Into the other one-third must be compressed all mathematics, history, literature, modern languages, and then if any time remained, the sciences.

In the present course with electives in the later years, there are still six years of continuous and uninterrupted study of Latin and four or five of Greek. Given an equal amount of time for each, and each pursued under equally natural and proper conditions, and a much fairer estimate of their relative merits might be attained to than is usually reached.

SECTION VIII.

THE OLD METHOD OF TEACHING THE NATURAL SCIENCES—Concluded.

3. But we imagine the chief reason for such a controversy to lie in the fact that not only has the object to be reached by sci-

entific investigation been misconceived, and the time taken much too limited, but the methods employed have been faulty in the extreme.

What was the method formerly? Almost universally the entire outfit for study consisted of a text book, in most cases a compilation by some professional book-maker, illustrated, if at all, by pictures familiar to everybody, for they had regularly appeared in every similar book published within a quarter of a century.

The good will and accommodative spirit existing among publishers finds no better proof than this, that they passed the plates of their illustrations around among their respective publishing houses till teachers and readers generally were tired and disgusted at looking at the old familiar pictures.

These pictures too often had only an indirect relation to the text which they were supposed to explain. The illustrations drawn by some unknown man in the remote past and the text prepared by another, the latter not an original worker, and it is no wonder that there existed, as there certainly did, a widespread distrust as to their practical value. The illustrations in some of our lately published books which are certified to as having been drawn from nature by the author, mark a grand step forward in text-book preparation.

Having the text-book, it was taken, not as a mere guide, but as the very embodiment of the subject; lessons were assigned and memoriter recitations gone through with. If the study was Physiology and the recitation was to locate one of the vital organs, the stomach, for example, it was referred with unfailing accuracy to the middle of page so and so, on the right hand side of the page. In those days any allusion to one's own body when such a subject was to be decided was considered indelicate and immodest, and the employment of a dissected cat was an unheard of thing. As some one has said, "It was foolishly counted a mark of idleness for our pupils to chase butterflies, pick flowers, or busy themselves with anything else than the book with which men have supplanted Nature's great text-

book." Such study soon degenerated into mere tasks, drudgery, from which the student was only too glad to escape, to seek the company of the grand old worthies and enjoy the stirring scenes recorded by Xenophon or Cæsar. Sometimes the teacher sought to add interest to the subject by means of problems, usually simple, arithmetical problems, depending upon principles of Physics or Chemistry. These are good in their place, but their function is not so much to throw light upon principles while they are being developed in the mind of the learner as they are to afford a practical application and testing of those principles when once they are apprehended.

By these means no doubt the mind of the learner became stored with much useful information, but it is to be questioned seriously whether by this process the brain was strengthened in its functional operations, and also whether the information thus gained was retained for any length of time.

There was that about this old method of teaching natural science that was very deceptive to both teacher and pupils, for when the testing time came and the competitive examination was held, the results seemed to show that real progress had been made. And we do not say that real progress was not made and good results reached. The old way was a good way and will doubtless be pursued to the end of time. It made the strong, progressive men of to-day; and we do not present any patent improvement, any short cut to the realms of knowledge, or easy way to culture; but the culture reached by this process was a literary culture and not the peculiar fruit which should be reached by scientific investigation. The old and well-tried methods of literary scholarship are not well adapted to scientific subjects.

But it is urged that in addition to the discipline which the memory has received by this process and the power of so mastering a subject as that any part of it can be reproduced with accuracy, completeness, and elegance at a written examination, the student has also stored his mind with many useful facts concerning nature and her wonders. Our criticism on the old

method is that it did not permanently and intelligently store the mind with these facts. They had no vital relation, in the mind, to the objects as found in nature but simply were referred to the text-book discussion of them. We have known many students who could make a good recitation in Zoology and describe, for example, the general structure of the cuttle-fish who would not know the animal if they were to see it. A specimen placed in the hands of a student in the midst of what otherwise would have been a faultless recitation, from memory, has often produced utter confusion, embarrassment, and failure. Why? Because the information had not been gained by the right method; it was not true knowledge but simply the parrot-like repetition of what had been learned from the text-book. In other words the proper co-ordination of the facts learned and the object to which those facts pertained had not been made.

We have thus seen that the choice and adoption of the proper method in science teaching is important not alone for its own sake, but also as the indispensable condition of securing to science its proper recognition, its importance in a curriculum of studies. At some future time we will discuss what is believed to be the true scientific method.

SECTION IX.

THE STUDY OF MATHEMATICS.

While from time to time new studies have compelled recognition by American colleges, and won a place in their courses of study, Mathematics has continued to hold its time-honored place, and to-day receives even greater attention than formerly. There are two important reasons for this. First, nothing else has been found to furnish the same kind of rigid discipline, training to so exact discriminations, to investigations so minute and searching, so vast and exhaustive, and yielding so sure and accurate results.

The fact that in mathematics the conclusion arrived at is

unquestionably true, that in every contest a decisive victory is possible, and that they who here struggle earnestly and wisely are sure of gaining much skill and great power, is a strong incentive to every well-balanced mind, and inspires with courage and firmness of purpose that discipline minds for great achievements.

The second reason is based on the fact that mathematics is the balance, the measuring rod, the microscope and the telescope of Natural Science. This gives to mathematical truth, method and investigation, an intrinsic practical value in their application to many departments of Natural Science, to many of the arts, and especially to architecture and engineering, where they have enabled men to overcome obstacles apparently insurmountable, achieving results commanding the highest admiration of mankind.

Studies that directly discipline and inspire men for such work are of no mean account. But let it be clearly understood that the nature, the magnitude and scope of the ultimate results attained must depend very much on the excellence of the discipline, the method and spirit applied, and on the question whether the investigations undertaken are sufficiently thorough and exhaustive.

We must, from the beginning, and at every step, insist upon a clear and complete apprehension and comprehension of the subject-matter of each truth in its relation to other truths; and we must, by repeated explanation, illustration and questioning, become sure that all these are so really in the mind's eye that the student beholds and comprehends all more certainly than he does material objects seen by the physical sense. No amount of mere memorizing will serve our purpose. Memory is not reason or judgment; in these everything must find a permanent lodgment. Language, upon which the memory commonly fixes its grasp, is merely the shadow of the substance, and the shadow itself will be dim and imperfectly defined in proportion to the absence of the light necessary to render it visible. Reason and judgment must from first to last grasp, and know, and hold in their embrace, the very substance.

In each branch of mathematics we should, at the earliest opportunity, in our teaching clearly show and emphasize the application of its principles to the solution of practical questions. A large proportion of students care more for the practical bearing of any study than they do for the truth itself, or its purely disciplinary value. Hence the interest they will feel in their work, the zeal with which they will devote themselves to it, and consequently the discipline and positive benefit they will derive from the study will depend on their view of its practical value. Furthermore, those who are enthusiasts in matters of pure theory equally need the practical application to make them feel that, after all, this is an intensely practical age, and that most men are pressing *business enterprises for the percentage of pecuniary gain they may reap*. Students should not be permitted to forget that they are being educated for *practical life*.

We call attention here to the importance of constant generalization in our study. There is danger that the mind will be overburdened by a vast number of truths held separately, but not supporting each other in the mind, simply because they are not seen in their relations with sufficient clearness. Therefore, as we ascend, at every step we should take a fresh look on the landscape, and so comprehend it in its entirety and unity that we shall feel truly exalted by our comprehension of it. The broad generalizations in mathematics, especially in the higher departments, are so important that the best effects—those most satisfying and stimulating to the student—would be lost were *they* wanting.

As in other departments of study, so here pre-eminently, there is an anatomy of the science, an indissoluble connection of parts, constituting an organism that should stand forth in clear light before the mind, till the student, beholding and affectionately admiring it, shall feel that its spirit has entered into his; nay, rather that what has seemed wholly *external to himself* is yet more than this, that it is an adumbration of something glorious and grand *in himself*, that exalts, ennobles and satisfies him—that turns his face toward the Infinite Source of all truth,

and prompts his own spirit to reach out always toward this Source for the bread of at least a stronger and nobler intellectual life.

Studying mathematics in this spirit should fit us for and incline us toward higher attainments and broader culture for all our powers and susceptibilities in every department of study, and so help to fill our lives with happiness for ourselves, and render them beneficent to others.

We are healthiest, strongest, noblest, when in all departments of our mental and spiritual nature we are properly developed and cultured. To accomplish this should be the high aim of a liberal education.

SECTION X.

THE STUDENT IN THE LABORATORY.

On entering the laboratory, whether physical, biological or chemical, the student should thoroughly appreciate the changed relations and different surroundings in which he finds himself. He has studied literature, history, mathematics, language or philosophy in the privacy and quiet of his own room; he has studied from books, but on taking up the study of the natural sciences his books have been taken from him and in their place he is given specimens and objects of natural history. He is led to look at these objects, observe as many points as possible, make notes of these points, arrange and classify the facts and truths thus obtained, draw his own conclusions, and discover underlying principles and laws.

If, now, we inquire as to the reason for the marked difference in the two methods of study, we shall find a partial answer in the fact that all truth is first discovered by the one who teaches and studies the true source of that truth. We as students obtain knowledge in one of two ways—either (1) upon the statement or authority of the one who first discovered it, or (2) by discovering it for ourselves.

It is a laudable ambition of every true student to do much of his work from the second standpoint. In order to accomplish this he must early be taught the methods by which this appeal to first sources is made. No field presents so good opportunities for this kind of study as the natural sciences. Hence the method which prevails to a greater or less degree, in these later years, is, in part, to require the student to discover for himself the truths he would learn. In a word it is the method of discovery as contrasted with that of authority.

Many difficulties lie in the way of such a method, and it is the student's first business to know what those difficulties are, and conquer them as soon as possible.

(1) He studies in the laboratory in company with other members of his class, and this necessitates some confusion which distracts his attention from the work in hand. To learn to isolate himself from all others by becoming absorbed in his work is his first duty.

(2) His apparent progress at first will necessarily be somewhat slow. He must learn to appreciate the greater value of a single truth acquired for himself than many learned at second-hand.

Think for thyself; one good idea,
But known to be thine own,
Is better than a thousand gleaned
In fields by others sown.

(3) The student naturally expects, by this method, to obtain only those facts which are made apparent to him through his physical senses. One of the early things which he must learn is that in the acquisition of truth he must enlist his whole being, sight, hearing, touch etc.; surely, but often in a greater degree, must there be brought into action his reason, judgment, and imagination. All the powers of mind and body must be so disciplined and trained that they can be concentrated upon the particular object of study.

(4) His memory must grasp and hold the whole of a series of facts until they can be brought into their proper relations, and the principles and laws discovered which bind them together.

(5) He must be a diligent student of language in order that

what he sees may be clearly described. Knowledge is of little value if for power of expression it must forever be locked up in the mind of the one who has discovered it.

(6) He must early learn that great courage and persistence are needed if he would come into a clear apprehension of truth. He must be willing to do much of what has been denominated "dead work," that is, work that has been done by others before him. Much of his work must be done over and over again, until, by familiarity with it, its true significance is brought to light.

This leads to the consideration of another question, namely, Where shall a student's work stop? It may stop at any one of several points, each denoting varying degrees of excellence in that work. For example, in order to understand a truth in biology he may

(1) Be content to read the statement in a book and simply give his assent to it.

(2) He may so memorize that statement as to be able to reproduce it when necessity requires.

(3) He may verify the truth by the observation and study of an appropriate experiment in the laboratory.

(4) To obtain a still more definite knowledge of the point in hand he may prepare drawings and diagrams.

(5) He may obtain, by any of these partial methods, a conception of the truth by which he is enabled to make a creditable recitation, provided he has the usual help from his teacher, and the privilege of retracing his steps and thus amending his previous statement; or,

(6) He may impose upon himself the highest and best test of the accuracy of the knowledge he has obtained and his familiarity with it, by reducing that knowledge to a clear, concise and original written statement which will withstand the criticism of others.

Some students, so-called, are content to stop at the first-mentioned point; most students go as far as the second or third; many faithfully practice the fourth and strive to attain to that

degree of excellence suggested by the fifth point. A notable and praiseworthy few are not satisfied with anything less than the accomplishment of the work contemplated in the sixth suggestion.

This last will require a considerable amount of time, more, perhaps, than the student has to bestow upon it. It is not suggested that every lesson should be rewritten before it shall be considered finished, but that the student should, as frequently as possible, practice himself in reproducing in this way the matter he has studied. In after years, when it is desired to utilize the power gained by the college course, it will invariably be through the written or spoken composition of one's knowledge into clear and forcible English. These and kindred considerations are worthy the careful attention of every earnest student, in order that he may judge as to the standard of excellence he is holding up before himself.

SECTION XI.

ASTRONOMICAL INSTRUMENTS.

Astronomical science owes much to the instrument-maker. Many of the most interesting problems of practical astronomy could not have been solved, if, indeed, they could even have been suggested, without the telescope, the clock and the chronograph.

The telescope is the instrument to which all others in an astronomical observatory are secondary.

Its value as an aid to the vision consists chiefly in two things: (1) its light-gathering power, and (2) its magnifying power.

The light-gathering power depends upon the diameter of the object-glass, one of eight inches in diameter receiving and concentrating upon the pupil of the eye about sixteen hundred times the quantity of light that would otherwise be received, while an objective, like the great Lick telescope, just completed by Alvan Clark & Sons, has a light-gathering power more than

thirty-two thousand times as great as the unaided eye. The magnifying power of the telescope depends upon the mutual relation of focal length existing between the object-glass and the eye-piece, and with a given objective may be increased to any desired degree consistent with clearness of vision, by simply using eye-pieces of shorter focal length.

But the telescope is more than a mere viewing instrument, and is to be considered and used chiefly as an instrument of precision. The marvelous delicacy of construction attained by modern instrument makers has brought the telescope to a degree of perfection that seems to leave little room for improvement. What the retort and the crucible are to the chemist, the telescope in its various forms is to the student of astronomy. By its aid he sounds the depths of space and measures with precision the most astonishing distances as well as the minutest fragments of time. He is enabled to deal with spaces when miles cannot serve him as units, but when his "measuring-rod" must be many millions of miles in length, while, on the other hand, he secures such mastery over the minute that hundredths of seconds become significant, and the time consumed in transmitting a volition from brain to finger-tip must not be overlooked.

Telescopic observations have suggested, and have usually supplied, the data for the most intricate mathematical discussions of theoretical astronomy. Without the telescope we should, no doubt, have remained in ignorance of the aberration of light and the proper motion of the stars, while our statements of interplanetary distances would have been the merest estimates. Access to good astronomical instruments stimulates the student to vigorous and independent research, and at the same time gives him the opportunity of gaining in the most profitable way the information he seeks.

SECTION XII.

METHODS OF TEACHING HISTORY IN ALBION COLLEGE.

That helps are needed to illustrate the intricate territorial changes of continental history, scarcely requires to be emphasized. Much of history, indeed, is little more than the record of such changes. The contrast between the hopeless confusion of many important epochs when studied without historical maps, and the beautiful clearness of the same epochs with the maps, is simply astounding, and is the true warrant for the time-honored claim of geography as one of the two eyes of history.

Having become impressed, after a deal of unsatisfactory teaching, that better machinery than the ordinary is almost a necessity, we have spent considerable time and pains trying different devices. For several years we used a map of Europe permanently painted on the blackboard, and, to show territorial changes, filled in with colored crayons. This method has the great advantage of growing before the class, changing with the history. But it is wanting in cleanness and accuracy, requires much disagreeable labor, and involves destroying the boundaries of the one period before putting on those of the next; so that the eye cannot compare the two stages.

Accompanying this device we have used for the pupils, small uncolored outline-maps, to be filled in for successive epochs by the student himself. Our class in medieval history last year was required to make eighteen of these. To get the outline-maps, we have copies made by the hektograph process. Tracing-paper can be used to get the first copy, thus bringing this scheme within the reach of every teacher.

We also use the scheme involving a series of wall-maps for successive epochs. With other teachers we have often felt the need of cheap printed outline-maps, to be filled up in the course of the work. In lieu of such outline-maps, we have gotten along pretty well by the use of white holland, which is suf-

ficiently translucent to be used like tracing-cloth; so that the labor of carefully drawing the map has to be performed but once. This material we buy in quantities, so that it costs but twelve cents and a half per yard. To secure the requisite width, two or more pieces can be sewed together. Being strong to resist wear and tear, for maps it is about the most satisfactory material with which we are acquainted.

But the best device, by all odds, which we have yet hit upon, is a system of ground maps with superposable fractional maps. The original map we mount on a soft pine back, and indicate every change by overlaying it with fractional maps corresponding in natural features to the original, but colored in such manner as to show the altered political relations. Thus, having a map of Italy divided and colored to show its political condition before 1859,—with Sardinia and Piedmont red, Austrian territory yellow, Parma orange, Modena gray, Papal States brown, Tuscany olive, and Naples purple,—we tell the story of Magenta and Solferina; then lay over yellow Lombardy a red Lombardy, to show its acquisition by Sardinia; and a green Savoy and Nice over the red Savoy and Nice, to show how France exacted them as the price of her assistance. Then, on Victor Emanuel's acceptance of the offered sovereignty of Parma, Modena, Bologna, and Tuscany, a red patch is tacked over these districts. So a red Sicily and a red Naples are laid on when Garibaldi's work is done. A red Ancona and Umbria finish the work for 1860. In 1866 Venetia is covered with red; and in 1870 the remainder of papal territory.

During the year we have worked out sets for the territorial history of France from 1550 to 1870, of Prussia from 1400 to 1866, of the Ottoman empire from 1680 to 1886, of western Europe from 395 to 888, etc. From no other plan have we obtained results at all comparable with those of this year.

The advantages of this device are apparent. It is superior to the series of maps, because (1) it changes with history; (2) a more definite concept of the changed territory is obtained when it can be taken off and handled as a piece of cloth; (3) the stu-

dent can be set to work out the changes for himself,—to build up or take to pieces the map; and (4) it is less expensive, involving but one or two full-sized maps. It is superior to the black-board scheme, because (1) it is clearer; (2) it is more accurate; (3) it is easier to reproduce, and so not too difficult for the student and the overworked teacher; and (4) it preserves both the original condition of things and the changed order; each of which can be reproduced in turn, and thus the exact nature and extent of the change can be clearly and definitely seen.

Incidentally, the use of a soft-wood back has suggested several little devices which we find quite helpful. For battles we use a bright red spear-head of stiff cloth fastened with sealing-wax to the head of a needle. These, being removable, are placed on the map just where events call for them; can be made large enough to show across any room without permanently disfiguring the map; do not crowd regions like the Netherlands, where many battles have been fought, till the confusion is hopeless; and, finally, furnish, in putting them on, a useful exercise for the student. Similarly, we use a yellow star on a black circle for treaties of peace, and lines of colored braid to follow expeditions, such as Alexander's or the crusades. Doubtless other expedients of the same nature will suggest themselves.

SECTION XIII.

METHOD OF INDEXING LIBRARIES.

Great improvements have been made in late years in the use of College Libraries. They have become more intimately associated with the educational work of the college. Indeed, the aim is to make the library the educational center of the institution. It is not deemed sufficient for students to learn the opinions of only one man, expressed in a text-book or in lectures or oral lessons, but the aim is to broaden his views by reading the varied shades of opinion expressed by different authors. Es-

pecially is this broader view desirable in history, biography, literature, social science, political science, political economy, natural science, and philosophy. To facilitate such a use of the library, card indexes are prepared and placed in easy access to all students. First, a card index of authors, alphabetically arranged. In this the author's name is the leading word upon the card, and below it, or on successive cards, are placed the titles of all books in the library of which he is the author. The number of the book is placed upon the card opposite the title. The student, knowing the author's name, is thus guided to the desired book.

Another drawer contains a title index, or catalogue, of all the books in the library, on cards alphabetically arranged. In this the title of the book is the leading word upon the card, the author's name following. The advantage of cards, instead of a printed catalogue, is that it admits of continued accessions without destroying the alphabetical arrangement.

Then there is the subject index, in which the subject is the leading word upon the card, and all books treating upon that subject, even those in which it is only incidentally mentioned, are there referred to by name, number, and if it is only a sketch or article in a book of which that subject is not the title, the page also. A student desiring to investigate any subject is thus guided to all there is in books and pamphlets upon that subject in the library.

Another drawer contains the biographical index, where the student is guided to the biography and biographical sketches of any one of whom he wishes to learn.

Still another drawer contains an index of current events, where the important events of the day, as they transpire, are recorded on cards. If the student wishes to know when Mr. Emerson died, or when President Garfield was shot, or when any other important recent event occurred, he goes to this index.

Besides these the library is supplied with Poole's index of periodicals, in which all the leading periodicals of the day are indexed, up to 1882, supplemented by the Co-operative Index

of Periodicals, published quarterly. By these students are guided to what they desire to find in the bound volumes of periodicals. Thus there are marked out paths to guide both the faculty and the students to such information as they wish to obtain in the library.

It is customary for members of the faculty to assign to the students certain topics for research, or subjects to obtain information upon, and thus their acquaintance with books is greatly extended, and they are disciplined in the practice of research. Tables are placed in different parts of the library where such students are permitted to sit and prosecute their investigations. The library is open during all school hours, and on Saturdays, and is free to all students.

PART III.

APPLIANCES AND WORK AT ALBION COLLEGE.

SECTION I.

LOCATION, BUILDINGS, RESOURCES, AND EARLY HISTORY.

Albion College is located in Albion, a thriving city in the central portion of the Peninsular State. The facilities of communication are all that could be desired. The Michigan Central Railroad and the Lansing Division of the Lake Shore & Michigan Southern Railroad connect it with all the principal routes of travel.

The College Campus contains about fifteen acres of ground in the eastern part of the city of Albion, and comprises an eminence beautiful by nature, which has been made more attractive by art. On the Campus, and facing the west, stand the three main buildings, built of brick and stuccoed. The central building is 40 x 100 feet, and is four stories high. It is devoted principally to the Conservatory of Music and the Department of Natural Science. It contains also one of the Society Halls. The other two buildings are each 46 x 80 feet, and three stories high. One of these is the Chapel and Library building, which also contains the Business Office and President's Room. The other building is divided up into Lecture and Recitation Rooms, containing in addition the halls of the two College Literary Societies and the Art Studio. On the Campus also stands the Astronomical Observatory, which is admirably equipped.

In 1843 the Wesleyan Seminary was opened in Albion. A few years later its charter was so amended that it enjoyed the powers and immunities of a Female College. February 15th, 1861, the charter of that which had been Albion Female College and Wesleyan Seminary was amended, and Albion College was founded with full collegiate powers, admitting ladies and gentlemen to equal privileges, equal duties and equal honors. Under these charters much useful work has been done. As a Seminary the institution enjoyed a large patronage, and aided in preparing many young men and women for the active work of life. As the graded and high schools of the State were projected, and came to perform more and more the academic work of the State, the functions and powers of the institution were enlarged, and a Female College was organized and continued in operation for several years. The success of this College for ladies created the conviction that an institution resting on a broader basis, and educating the young of both sexes, would accomplish more good in the wide field to be occupied, and the results have fully justified the anticipations cherished.

For the means of prosecuting its work the institution depends upon the income from its productive funds, and an incidental fee of \$5 per term received from each student. There is no tuition, except for instruction in music and painting. The endowment fund is in the hands of an Endowment Fund Committee, which exists in pursuance of a special State Statute, said committee being authorized by law to pay over to the Trustees of the College only the interest of the fund they control.

SECTION II.

DEPARTMENTS OF THE INSTITUTION.

College.

{ Providing four courses of study requiring the same time—four years—for completion. Conferring four first Degrees, B. A., B. Ph., B. S., and B. L.

Conservatory of Music.	{ Providing a four years' Musical Course. A Diploma granted on graduation. { Providing a six years' Musical and Literary Course. Degree of B. Mus. conferred.
School of Painting.	{ Providing a four years' Painting Course— student receiving a Diploma on graduation. { Providing a six years' Painting and Liter- ary Course. Degree of B. P. conferred.
Preparatory School.	{ This school prepares for each of the four College Courses and covers a period of four years of instruction.
Academic Department.	{ This department is arranged for students who do not desire to prepare for college, or take any of the languages.
Commercial Department.	{ This department is arranged on a plan to furnish considerable literary work with Com- mercial studies, so as to send out intelligent business men.

SECTION III.

AIM OF THE INSTITUTION AND PRINCIPLES OF WORK.

The aim of those on whom officially the responsibility of managing the affairs of Albion College has been devolved, is to make it an institution worthy of the patronage of any who are seeking superior advantages for the best mental culture. It is not to build up a cheap college—though the necessary expenses for each student are kept at the lowest figure—but to provide an institution not inferior in quality and range of work to the leading colleges of the day. Everything else is made secondary to the fulfillment of this purpose. Therefore every year the

course of study is strengthened, new lines of work are introduced, advanced methods adopted, and the problem of college work thoroughly and constantly studied in view of the new demands our American civilization is creating. It is held that the college should be managed, not for the intellectual benefit or mental luxury of the few, but for the good of all as a practical provision for the elevation of the people.

There are several facts to which we call attention.

We have arranged four distinct and radically unlike courses of study: the Classical, the Latin Scientific, the Scientific and the English. In the Classical, the Latin and the Greek hold a prominent place. In all colleges, both in Europe and America, until quite recently, there was no other course. And at present, many scholars maintain that more culture is gained from this line of work than from any substitute that has been offered.

In the Latin Scientific the Greek is replaced by other studies but *requiring the same amount of time for their mastery*. These studies are principally—though not wholly—in science and mathematics. But students who desire to make a specialty of Latin or some of the modern languages, can substitute further work in these languages for such branches in science or mathematics as have been introduced into this course in place of the Greek found in the Classical Course. This will make the course pre-eminently linguistic, the same as the Classical Course. The degree conferred will be Bachelor of Philosophy.

In the Scientific Course there is no ancient language in the College curriculum, and but one year of required Latin in the Preparatory, and also one year of either Latin or Greek. But the amount of Mathematics, Science and History, is largely increased.

The college has established an English Course in which no Latin or Greek is found, but special attention is given to the study of the English Language, including the Anglo-Saxon. This course supplements the work of the English Course of the High Schools, and supplies a want which colleges generally do not meet.

The degree which the student will receive on graduation is determined by the course he has pursued up to the Junior year. The two years which follow are devoted wholly to *elective* work, except Psychology, Logic and one term of Chemistry, which are required of all students who are candidates for degrees.

Several studies in the Freshman and Sophomore years have recently been made elective.

SECTION IV.

HIGH SCHOOLS—THEIR RELATIONS TO THE COLLEGE.

Albion College has a four years' preparatory course of study, on the completion of which students are admitted to our Freshman Class. A close inspection of the quality and range of work in the High Schools of this state and some neighboring states, has convinced us that we can safely trust them to do this work for us; in other words, that we can substitute the work they do—year for year—for the work of our own Preparatory School, under certain conditions which will hereafter be mentioned. Thus the majority of the High Schools having a four years' course can prepare the student for our Freshman Class, and High Schools with a three years' course, for our fourth Preparatory Year. Therefore we shall hereafter accept the work of *approved* High Schools in lieu of the work done in our Preparatory School in all cases in which the individual student is fully endorsed, allowing year for year, so that the completion of a two years' course in any such school will entitle the student to enter our Third Year; the completion of a three years' course to enter our Fourth Year; and the completion of a four years' course, the Freshman Class of the College. As preliminary to arrangements for this end the College would be glad to obtain the catalogues or courses of study of the different High Schools of the state, and also catalogues from schools in other states.

As the primary object of the High School is not to prepare

the pupil for college, but largely to do an independent work, the order there prescribed naturally differs somewhat from that employed in purely preparatory schools. Therefore, to accommodate the hundreds of young men and women from the High Schools who, in seeking liberal culture, propose to take the college course, we have arranged an order and plan of work which will be found in that part of this book devoted to courses of study. We have done this because we are in fullest sympathy with the spirit and aims of our public schools, and because also we are convinced that the intelligent superintendents and principals of these schools are in a position to solve, to the best advantage, the problems of primary and high school work. We believe that colleges may safely bring the beginning of their courses of study into direct relation with the closing portion of the courses of study in our best planned and most enterprising High Schools. Colleges have too commonly stood aloof from the general school agencies in which the public are specially interested. This is unwise.

Schools desiring to enter into relations with the College so that their pupils can be admitted without examination, should make application for the establishment of such relations through their Superintendent or Principal. The courses of study should be forwarded; and correspondence having been instituted, ordinarily the conditions can easily be decided upon.

To become approved or accredited schools no expense need be incurred. And while the College seeks to understand the workings of the different High Schools, it greatly desires that the teachers from such schools shall visit us, examine our methods and become familiar with all our work.

For the admission of students on certificates—

1 Send to the President of Albion College the course of study you have pursued.

2. Send a certificate from the Superintendent or Principal of the school, explicitly stating the work you have done and the quality of the same. This certificate also should supply infor-

mation as to the earnestness of your work, and your moral character.

3. The inspection of schools by the University of Michigan will be accepted as sufficient to determine their character, so that a diploma on which the University admits into the Freshman Class will be honored by us.

4. Certificates from any other school which has received our *approval* will *entitle* the student to a position in the institution of corresponding rank with that reached in such school—that is, the completion of a four years' High School course will be accepted in place of our preparatory work, and entitle the student to the rank of Freshman; the completion of a three years' course will prepare for our fourth preparatory year; and the completion of two years' work will be accepted in lieu of the first two years of our preparatory studies, as hereinbefore stated.

SECTION V.

RANGE AND RELATION OF WORK IN ALBION COLLEGE.

The curriculum of college studies half a century ago has undergone, in many institutions, very extensive modifications; and those schools that adhere rigidly to the past are suffering in comparison with the class referred to. The ancient regime restricted the lines of study almost wholly to Latin, Greek and Mathematics, with something of Mental and Moral Philosophy. In the truly modern college a good deal of attention is given to the modern languages, to the sciences, to history, and to studies which are purely English. It may be remarked that there is much unreasonable prejudice against the study of the languages. While they should not monopolize the attention of the student to the exclusion of everything else, they rightfully may claim considerable of his time if the fullest culture is sought for. No other studies are more practical. In every department of life we are constantly employing language. Not only is this true

of the clergyman, the lawyer, the statesman, and the journalist, but it is true of every private citizen who has the least to do with public affairs. The clerk in the store, even, employs language more than he does arithmetic. Language is the repository and vehicle of thought. As listeners as well as speakers the significance of words and the content of sentences employed depend on the depth and comprehensiveness of our knowledge of language. Indeed, we think through language, and the reach of thought is limited by the scope of the language as understood by us. As man is a being who uses language more than anything else—employing it in business, in social life, in intellectual pursuits, in his relations with others, and in the subjective development of mental power—the more profoundly it is studied, and the more meaning we are able to put into it, the grander and more practical will life become. In the foregoing considerations nothing has been said of the special forms of mental culture promoted by the study of language. The benefit thus obtained is justly regarded as exceedingly valuable, and it is generally conceded that it cannot, in every respect, be gained from any other line of study.

The partiality for mathematics grows out of two forms of service rendered; one of these as the instrument of business and the development of science; the other as helping to generate a habit of accuracy of thought and power of attention. Mathematics, therefore, will always be given a large place in the college curriculum.

The growing interest in science has compelled colleges to give it a larger place in the four years of study than it formerly occupied. In some institutions the traditional aristocracy and exclusiveness of the past have not been sufficiently dissipated to allow the study of nature its proper share of time. It should be borne in mind that he who reads intelligently the book of nature is not only in communion with truth under conditions very favorable to the inspiration of thought, but a habit of close observation is acquired which is exceedingly fruitful of scholarly attainments. One of the most important acquisitions is the spirit of intelligent searching after truth.

It is only within a few years that the study of history has occupied to any extent the attention of our American colleges. That the lessons we may learn from history are of great value to us is indisputable. And unless colleges choose to incur the odium of deliberately rejecting that which is universally recognized as highly important, historic studies should have a leading place in these institutions of learning.

Our mother tongue has usually received but little attention in the colleges of this country. The ancient languages were universally conceded to be of vital importance, while the English was pushed aside only as it came into notice through the Latin and Greek. It is time that the folly of this was clearly perceived, and a radical revolution effected. While all languages should be considered a unit, and should be studied in their relations one to the other, the English-speaking student should have his eye always on the English, and make all other linguistic lines converge towards his mother tongue.

There is another broad field for colleges to occupy in which they come closer to the daily life, and hear the heart-throbbings of the public. We speak of the problems of Political Science, Social Science and Social Reforms. These problems should receive special attention if the college would do for the public all the work which may reasonably be demanded of it. And problems of this nature should be pursued not simply by the perusal of a text book, or by listening to formal lectures, but by exhaustive research, the studying of the questions involved, from all sides. Thus will the knowledge gained be more exhaustive, the opinions formed more independent, while the most successful method of looking up the data for intelligent judgment on practical questions will be learned. In nearly every line of study the college ought to put the pupil in the way of going outside of the teachings of the text book, and making broad and extensive researches.

It is evident that any college fails to achieve the best and most reliable results unless it finds God at the foundation of all truth, unless it carries the student into the sphere of ultimate

divine causation, as a reason for and explanation of all science and conditioned being. Intellectually the work is incomplete, the scholarship rests on the sand, unless God is the support of the great temple of truth that is reared. The race can never be strong without a God, and colleges which do not aim to bring the Unconditioned Absolute Will into the problem of nature, tolerate weakness instead of generating strength.

SECTION VI.

RELIGIOUS INSTRUCTION.

On each school day at 9 a. m., religious services are held in the College Chapel, which all the students are required to attend.

On Sunday morning they are required to attend public worship at such church as they or their parents or guardians may select, and each student is expected to be uniform in his attendance at the church of his choice.

Every student also is required to attend the Sunday afternoon lecture given by the President. These lectures are upon some moral or religious theme.

On Thursday evening is held the general weekly prayer-meeting, which is a voluntary service, but is attended by a majority of the students.

On Tuesday evening there is a church class, composed of students, of which Professor Barr is the leader.

At 3 p. m. each Sabbath, a student's gospel meeting is held in the chapel. This is followed by a Bible Reading service among the ladies. At 9 a. m. on Sabbath the young men meet for like study.

There are in the Institution two Christian Associations, one composed of young men, the other of young women. They perform much valuable work.

Albion College is not a theological school; it is not its office to impart instruction distinctively on theological and ecclesiasti-

cal subjects. But believing in morality we must believe in religion. No institution of learning will have a healthy moral atmosphere which is not pervaded by a christian spirit. To guard young men from the vices so common in every community there must be a distinct religious sentiment and a positive spiritual atmosphere from which immorality is shut out, and which serves as an inspiration to pure thoughts and a correct life. But while Albion College does not teach theology, it does teach God as the creator of all things, as a personal providence to every human being, as the author of the Bible, and in Christ the Redeemer of the world, who is ready to save every one who in penitence and faith will come unto him for everlasting life. While the school is not sectarian, and does not interfere with the denominational preferences of any student, and while it does not aim to make educated ministers any more than educated lawyers or physicians or business men, it does hold that God has rights in every lecture-room, that he must not be shut out from any department of instruction, and that truth can have no foundation only as it rests finally on the being and creative power of God. The authorities of the college hold that character is more than scholarship, and to be perfect the character must be christian. The aim is to supply the world with educated christian men and women for all the professions, for all departments of legitimate business, and for all proper relations in life.

SECTION VII.

COLLEGE REGULATIONS.

Only such requirements of the college as relate to good order and wholesome discipline are here presented. Indeed the great body of college laws must be unwritten. They need not and cannot be put on the printed page.

1. Persons coming to Albion for the purpose of entering any department of the College are subject to its discipline from the time of their arrival; and whenever a student has entered Col-

lege he is under its jurisdiction until his connection is formally closed by graduation or otherwise.

2. Students who are not in their places at the opening of the term must, if minors, present written excuses from their parents or guardians for their delay; and if not minors, must give a satisfactory excuse for such delay.

3. Uninterrupted attendance upon college duties during term time is required. Under ordinary circumstances visiting friends or home is discouraged.

4. Calls on students, whether by students or other persons, must not be made at such hours, or for so long a time, as to *interfere with college duties*.

5. Young ladies are allowed to receive calls from gentlemen only to a *limited extent*, and in *public rooms* occupied by the family there residing. All calls must be made during the *early part of the evening*, and in no case may continue after 9:00 p. m., standard time.

6. Young ladies are not permitted to absent themselves from their rooms in the evening except on special permission granted by the President.

7. All students are expected to devote to study the hours designated for that purpose, and at their own rooms. Young men who employ the evening for *other purposes than study* violate the order and regulations of the Institution, and render themselves liable to discipline.

8. Young ladies may not attend lectures, concerts, or any public or private entertainments, or absent themselves from their rooms in the evening, except on special permission granted by the President.

9. No student is permitted to leave town without the President's permission.

10. Students are not allowed to board or room at any place the Faculty disapprove, nor any longer at a place than they approve, nor to change their place of boarding or rooming during the term without the consent of the President.

11. Young ladies and gentlemen, unless they are brothers

and sisters, will not be allowed to occupy rooms in the same house.

12. No student is allowed during term time to engage in teaching, or to recite in other than the classes of the Institution, except by permission of the Faculty.

13. No student can drop any study without the consent of the President and Instructor.

14. All unexcused delinquencies are registered, and when the number amounts to three, notice is given to the student and to his parents or guardian. When the number of unexcused delinquencies amounts to five, the President announces the suspension of the student. Students may be suspended or dismissed from the Institution whenever, in the judgment of the Faculty, the interests of the school require it. A single case of willful neglect of duty is sufficient reason for discipline, as it is an infraction of the order and requirements of the Institution.

15. All delinquencies, such as tardiness, deficiency, offenses against good order in the recitation rooms, are dealt with by the Professors of the Departments. Flagrant cases are reported to the President or Faculty.

16. Before their delivery in public all literary exercises of students must be submitted to the Professor of Rhetoric or some other member of the Faculty.

17. No person may be invited by the students to deliver an address in connection with the Institution except by permission of the President.

18. Students who at the close of a term do not expect or desire to remain the following term *must apply for leave of absence or honorable dismissal* from the Institution. Unless dismissed or excused they are subject to the regulations and government of the College. *Unexcused absence works forfeiture of privileges* heretofore gained by enrollment or matriculation.

19. Entering the Institution is a pledge on the part of the student faithfully and conscientiously to obey all the rules and regulations.

It is not necessary to mention the requirement to abstain

from all forms of immorality, as no one can be ignorant of the fact of their prohibition.

Families where students board or room are expected to take an interest in having them keep all the College rules, and avoid placing any temptations before them calculated to interfere with college discipline.

SECTION VIII.

SOCIETIES.

There are three Literary societies connected with the Institution: the *Erosophian Society*, the *Eclectic and Atheniædes Society*, and the *Philozetian Society*. The two former are college societies, the latter is connected with the Preparatory School. Students in preparatory classes may join the *Philozetian Society* and remain in the same until reaching the Freshman Year. They are not at liberty to become members of either of the regular college societies before they complete the studies of the first three preparatory years.

The *Missionary Society* is organized for the promotion of the missionary spirit.

There are two Christian Associations—the Y. M. C. A. and the Y. W. C. A.

A Reading Circle has been organized in connection with the Conservatory of Music.

The Ladies' Library Association carries forward its work by the employment of eminent lecturers, the profits accruing being devoted to the purchase of books for the library. It has this year paid \$100 into the library fund.

A college paper, called the *Pleiad*, is published by a society or stock company organized for that purpose.

The Literary Societies have fitted up elegant apartments in which to hold their weekly meetings.

No literary or other society can exist in connection with the Institution unless by permission granted after the Constitution

and By-Laws of the same shall have been submitted to the Faculty for examination, and shall have received their approval. Whenever the workings of any society shall be deemed prejudicial to the interests of the Institution, such society will be dissolved.

The times and places of the meetings of societies will be subject to regulation by the Faculty; and all meetings, whether of regular societies, or of any other body of students, shall be open for the attendance of any member of the Faculty or of the Board of Trustees.

No society in the College shall invite any lecturer to address them in public until the name of the proposed lecturer shall have been laid before the President, and he shall have given permission to extend the invitation.

SECTION IX.

EXAMINATIONS AND ENROLLMENT.

The opening day of each term is Enrollment Day. As a special list of students is prepared for each term, all students must report for enrollment on the first day of each term. For new students this is the act by which they become members of the Institution. The tickets issued contain a list of the studies to be pursued, and also a statement of dues. Such tickets are then taken to the Secretary to whom the dues are paid. This must be done to entitle the person to the privileges of instruction in the Institution. All individuals intending to enter any of the departments of the College should report on the first day if possible. If this cannot be done they will be received at a later date if qualified to enter the classes. Persons who are already students are also *required* to take out their term tickets on Enrollment day, so as to be able on the following day to prosecute their work with the regular classes. The closing of a term does not terminate the student's connection with the Institution; *and unless he graduates or is excused by*

the President he must be present on the first day of the succeeding term. Absence on that day is as much a violation of the rules and order of the school as though it occurred in the middle of the term.

Entrance examinations will be held on the day next preceding Enrollment day at the beginning of each term. All persons will be admitted only on examination, except the following: (1) Persons graduating from schools which are recognized by the University of Michigan as preparing for college. (2) Persons graduating from schools *approved* by action of the Faculty of Albion College as satisfactorily preparing for college. [In this list of schools are included those which prepare for the Freshman class, or only for Fourth Year Preparatory]. (3) Persons bringing satisfactory certificates from schools which, though no formal action has been taken to put them in the class of approved schools, are yet known to be doing good work. On these certificates credit will be given, provided the student is earnest and successful in his studies here. We advise all students from graded schools to bring certificates of studies pursued and standing in the same, and if there is satisfactory evidence of thorough scholarship credit will be given.

There is an examination at the close of each term on the studies pursued during the term. The daily work and the examination must both be satisfactory to entitle the student to the record of passing on the same.

SECTION X.

LIBRARY AND READING ROOM.

The number of books added to the library during the past year is 421, making the whole number now in the library 5,621. Among the accessions are the following presented by friends: By Gov. Alger, Mineral Resources of Michigan; by Silas Farmer, History of Detroit; by Dr. J. M. Reid, thirty-one bound volumes of Reports of the Missionary Society of the

Methodist Episcopal Church, and five other works on Missions.

The nucleus of a Bibliographical Museum has been formed by placing in the Library a glass case for books specially notable on account of age, rareness, ownership, etc.

In the management of the library great pains is taken to induce the students to use it as much as possible, since we hold that to train them in the use of books, the store-house from which all alike must draw, is one of the most important functions of the College. With this object in view ample indexes are provided; books much in demand are placed within the reach of all; and new books are placed in a revolving case in the reading room, where their accessibility will tempt every one at least to look them over. The utilizing of new books is further secured by placing them in the hands of the teachers most interested, who frequently assign them to students to review before their classes, thus giving all an opportunity to learn the bibliography of the subject, and filling all with new zest for work in the several departments,

The usefulness of the various reports, collections, etc., in chemistry and biology, has been greatly increased by transferring them to the chemical lecture-room, which is now kept open during the day, and is being used as a study room by those most interested in these lines of study.

The reading-room is provided with a two-fold end in view: to furnish a wide range of general newspaper and magazine reading, and to supply advantages for special educational work. It contains the leading religious and secular papers of the country, with some from foreign lands, including French, German, Latin, and Greek. It is supplied with the principal magazines of this and other countries.

The library and reading room are open to all, without charge, each day in the week, excepting Sunday.

SECTION XI.

MUSEUM.

The Museum is permanently located in large, well-lighted rooms occupying the second and third stories of the central building; and many improvements, not possible before, have been made. The collections are classified and arranged with special reference to the convenience of the student.

The museum, like the microscope, was long considered as something to be used as a matter of curiosity, the examination or use of which was to amuse or entertain rather than instruct. From even this standpoint the museum has been an educational agent, for no one can look through a well-arranged cabinet without absorbing knowledge which he did not possess before. But the best result which should be realized from the labors of the collector and curator is that students pursuing lines of work in natural history may here find ample illustrations of the objects about which they study. This is the prominent thought in the valuable facilities which are offered in the Museum of the College. In a word the Museum forms a very important factor in the educational forces of the Institution.

Acknowledgment is hereby made of donations to the collection from Messrs. Amos Buck and L. J. Knapp, of Stevensville, Montana; Miss Elise Chase, of Corinne, Utah; Chauncey S. Harmon; Lizzie Hewitt, of Mexico; Fred. Mumford, Chas. H. Gordon, A. E. Bibbins, and R. Will Holmes.

The contributions of these friends have added many fine specimens during the course of the year, and are gratifying indications of the interest manifested in this branch of our work.

Among the special features of the Museum may be mentioned the collection of coins and other historical relics. Cases are now provided for this collection, and it is to be hoped that soon we shall have a large amount of material to aid in the study of history. We are also exceedingly anxious to make complete collections in two directions, viz., Indian relics, and objects of interest used in the late war.

*SECTION XII.***CHEMICAL AND BIOLOGICAL LABORATORIES.**

These laboratories occupy the south half of the second floor of the central building; the former using three rooms for the working laboratory, apparatus, and storage rooms; the latter one large room 40 by 20 feet.

The Chemical Laboratory contains tables for twenty-one students, fully furnished with reagents and all apparatus required for the thorough demonstration of the facts and principles of the science.

The Biological Laboratory contains tables for twenty students, twelve compound microscopes, several hundred mounted objects, and all necessary appliances for preparing and mounting specimens in all departments of biological research.

These appliances are constantly increasing. They are regularly used in the class room, where they furnish experimental proof of the laws and theories discussed.

In connection with these laboratories, and easy of access by the students, is a chemical and biological working library of nearly five hundred volumes. These books are in constant use and furnish much collateral aid in subjects under investigation.

*SECTION XIII.***THE OBSERVATORY.**

Our new Observatory, erected in 1883, is a substantial brick structure, two stories high. The first floor contains the lecture-room of the department of Astronomy and Applied Mathematics, together with the pier rooms through which pass the brick supports for the fixed instruments above. On the second floor is the instrument room, containing the Transit-Circle, Clock and Chronograph. Also on the second floor are three rooms designed respectively for an astronomical library, a computing

room, and a room for portable instruments. The round tower, containing the Equatorial, and surmounted by the dome, rises sufficiently above the main building to give an uninterrupted view in all directions. The equipment of the Observatory includes the following pieces:

(1.) A Refractor of eight inches clear aperture, manufactured by Alvan Clark & Sons, and supplied with Circles, Driving-clock, Micrometer, etc., etc.

(2.) A Transit-Circle, with four-inch Telescope, and circles of 16 inches diameter, read by two Micrometer-Microscopes to single seconds.

(3.) An Astronomical Clock with battery connections and break-circuit attachment.

(4.) A Chronograph of latest style, supplied with Saegmuller's maintaining power.

In addition to the above the lecture-room of the Observatory is being supplied with such astronomical maps and charts as are necessary in imparting elementary instruction.

The department of Applied Mathematics, at present united with that of Astronomy, is fairly equipped for purposes of illustration in mechanics, optics, acoustics, heat, magnetism and electricity, especial attention having been given to electrical appliances in view of the rapidly increasing application of electricity to practical results. In surveying we have excellent instruments, giving the student full opportunity for all lines of field work.

SECTION XIV.

MAPS AND CHARTS.

Of apparatus for illustrating the work in Language, Literature and History, we have probably as large a collection as any school in the United States. Both the Greek and Latin departments are provided with full sets of classical maps. The Greek department has abundant materials for the illustration of Greek

Archæology, and a rarely complete set of charts for exhibiting in detail the topography of ancient Athens. The head of this department is working out on an original plan a series of language charts which, when completed, will present to the eye a full outline of the leading facts of Greek Grammar.

The History department, where the "Layer Map" plan, (elsewhere described) has been introduced, has at its command about 180 maps, representing successive stages in territorial history. If every change which can be represented singly be counted, the total number of possible maps would aggregate about 800. In addition to the series formerly prepared, showing the development and break-up of the Roman Empire, the formation of the new nations up to 843 A. D., the break-up of the Ottoman Empire, from 1699 to 1885, the development of Prussia to 1866, the growth and dissolution of the Napoleonic Empire, and the unification of Italy, we have this year prepared a set of "layer maps" for the United States, showing every territorial change in its history from 1763 to 1876,—changes, the number of which falls but little short of 100. As new maps are being constantly added, we hope to be able in a few years to exhibit every important territorial transfer appearing in the course of history.

SECTION XV.

APPLIANCES IN THE SCHOOL OF ART.

CONSERVATORY OF MUSIC.—The Conservatory of Music is supplied with all the instruments required for successful work. There are in the institution eleven pianos, eight of which are used for instruction purposes. One of these is kept in the chapel for use in concerts and on other occasions in which a piano is needed. This is an instrument of more than ordinary power. Each of the three literary societies has a valuable piano, which helps to make music an interesting part of the weekly exercises. Students in the Conservatory are able, to a large

extent, to practice on college instruments. Aside from these the institution is able to supply students to an almost unlimited extent, with the use of pianos at private residences in immediate proximity to the college buildings.

The institution possesses two organs, one of these with all the appointments of a two-manual pipe organ.

The department possesses a Technicon, for use of piano students in disciplining the muscles of the hand.

The Orchestra, composed of about fifty players, is supplied with all the variety of instruments employed for the production of orchestral music.

The Conservatory has a valuable musical library, which is being enlarged as desirable publications make their appearance. It is also in receipt of the best musical papers and journals.

SCHOOL OF PAINTING.—This school occupies a suite of rooms in the North College building, both as working rooms and for art gallery. The gallery contains about 150 hanging pictures. Some of these pictures have been painted in connection with the school, but a large portion of them are selections from the best American artists. There are also many very fine imported studies—copies from celebrated painters—which represent the various schools of art. These afford the student a fine opportunity to study and compare the various methods of conducting art work. The department keeps on hand a large supply of easels of uniform pattern, with material stands etc., for the use of students. Persons prosecuting work in the rooms have access to about a thousand patterns. A complete set of models for drawing, consisting of cubes, cones etc., are provided for use; also models of different parts of the human figure. The art room is supplied with a somewhat extensive collection of heads and busts of distinguished men of the past.

SECTION XVI.

PREPARATORY SCHOOL—GENERAL INFORMATION.

The object of this school is to provide young people who desire to fit themselves for college with the most complete advantages to make such preparation. It is not an academic department for general study, but is conducted purely in the interest of those who intend to pursue studies required for admission into college. [For academic work a special department has been arranged, as is announced elsewhere in the Year-Book.] One of the chief features of the curriculum of the Preparatory School is that the modern languages are introduced at the very beginning of the course, in order that the student may be prepared to study the ancient languages, when reached, more successfully than it is possible otherwise to do. The entire work of the institution is based upon the principle that a considerable portion of the *present* in language, in history, in science, in philosophy, should be taught before the past, in order that the student may have the problem of knowledge clearly before him, so that he can intelligently study the development of truth. We begin with the *near*, the *concrete*, the *simple*, the *empirical*, and gradually proceed to the *remote*, the *abstract*, the *complex*, the *rational*. This is the natural and necessary order of mental growth, and the tasks to which the student is put should be in harmony with the laws of mind, instead of being in conflict with them.

Candidates for admission must be at least twelve years of age, and have a knowledge of the primary branches, including Descriptive Geography, Mental Arithmetic, Written Arithmetic through fractions, and some knowledge of English Grammar.

In all cases satisfactory testimonials of good character must be given. Of students coming from other institutions a certificate of honorable dismissal is required.

Before admission to recitation the student will procure a term ticket from the Secretary of the Board of Trustees, showing

that the term bills have been paid. *The Faculty are not at liberty to give instruction previous to the presentation of the Ticket.*

All candidates for admission will call first at the President's Room, No. 3, Chapel building.

Regular examinations for admission will be held the day preceding the enrollment at the opening of each term. [See Calendar.] After examination the applicants will report to the President, room No. 3, Chapel building.

All students in the Preparatory School will be required to have Rhetoricals at such times as the Faculty may prescribe.

A table of expenses may be found on a subsequent page.

The courses of study are printed in another part of this volume.

SECTION XVII.

COLLEGE OF LIBERAL ARTS—GENERAL INFORMATION.

Examinations for admission will be held on the day preceding enrollment, at the beginning of each term. [See Calendar.] After examination the applicants will report to the President, room No. 3, Chapel building.

Candidates for admission to the Freshman Class must be at least sixteen years old, must pass examination in the Primary English branches, and in all the studies of the Preparatory Course, or studies equivalent thereto as taught in the High Schools, unless admitted on diploma or certificate from High Schools under conditions elsewhere stated.

Candidates for advanced standing must, in addition to the foregoing, pass examination on advanced studies for which credit is sought, unless coming from other colleges whose work is accepted by us. Persons not candidates for a degree will be admitted to the regular classes, but will be charged the matriculation fee when their scholarship would entitle them to admission into the Freshman Class.

In all cases satisfactory testimonials of good character must

be presented. Of students coming from other colleges a certificate of honorable dismissal is required.

Before admission to recitations, the student must procure a term ticket from the Secretary of the Board of Trustees, showing that the term bills have been paid. *The Faculty are not at liberty to give instruction previous to the presentation of this ticket.* All candidates for admission will call at the President's room, No. 3, Chapel building.

A table of expenses for all the departments is printed on a subsequent page.

The courses of study will appear later in the Year-Book.

SECTION XVIII.

DEGREES.

The degree of Bachelor of Arts is conferred upon all who complete the classical course.

The degree of Bachelor of Philosophy is conferred upon all who complete the Latin Scientific course.

The degree of Bachelor of Science is conferred upon all who complete the Scientific course.

The degree of Bachelor of Letters is conferred upon all who complete the English course.

None of the above degrees will be conferred except upon satisfactory examination, and payment of the regular fee of five dollars; and *the name of no student will be presented by the Faculty to the Board of Trustees for a degree till he has submitted to the Faculty the receipt of the Secretary for the payment of all dues, including the fee for diploma.*

No one will be admitted as a candidate for any of the above degrees later than the first term of the Senior year.

The degree of A. M., Ph. M., or M. S., unlike that of LL. D., or D. D., is, in theory, not honorary, but a voucher for the recipient's actual and ascertained progress in some special line of post-graduate work; while in practice these degrees have been

almost universally conferred by American colleges without any reference to the preparation or fitness of the candidate. During the last decade, however, there has been a general movement toward the correction of this evil; in harmony with which movement the Board, in 1879, passed a series of resolutions which furnish the basis of the following regulations:

1. Graduates of any year previous to 1880, of three or more years' standing, who have been engaged for three years in literary or scientific pursuits, will be recommended for the Master's degree, upon written application and the payment of the regular fee of five dollars.

2. Any person graduating subsequently to the year 1879, may obtain the Master's degree by either of two methods, viz.: (1) one year of exclusive study in Albion, or (2,) a three years' course of reading pursued in connection with other occupations.

3. A candidate electing either of these methods will be required, (1,) at the beginning of his course to elect, with the advice and approval of the Faculty, one principal and two subordinate lines of study; (2,) at least one month before recommendation for the degree to pass a satisfactory examination upon such work in each of the three lines as may be specified by the Faculty; and (3,) at least two months before recommendation for the degree to present a thesis upon some topic approved by the Faculty in his principal line of work.

4. In the case of one-year candidates, residence in any college town, or other place furnishing facilities for special study, such as libraries, museums, etc., will be accepted in lieu of actual residence in Albion; provided, always, that all other conditions herein stated are rigidly complied with.

5. In no case will the candidate be recommended for the degree before he shall have paid in the regular fee of five dollars.*

*NOTE.—Any person desiring to become a candidate for either of these degrees will at once communicate with the Secretary of the Faculty, stating the lines he would prefer to work in, his present occupation, his facilities in the matter of libraries, etc., etc., when the Faculty will determine, as nearly as possible in accordance with the applicant's inclinations, the studies to be pursued, prescribe the books to be used, etc., etc. As the work will be entirely elective, no specific course can be here laid down; but in general it may be said that the candidate will be expected to work in the subordinate lines as a general student; in the principal line as a specialist.

The following will serve as specimen schemes:

SPECIAL COURSE IN LATIN.

1. Principal Line—De Officiis of Cicero.
Thesis—Cicero's Relation to Roman Philosophy.
2. Subordinate Lines } Outline History of Roman Literature.
 } History of Transitional Period and Early
 } Empire, (133 B. C.—68 A. D.)

SPECIAL COURSE OF GREEK.

1. Principal Line—One of the Dialogues of Plato.
Thesis—Immortality of the Soul, as held by the Greeks,
especially Plato.
2. Subordinate Lines } 1. Comparative Mythology, Greek and
 } Oriental.
 } 2. Origin of Language.

SPECIAL COURSE IN CHEMISTRY.

1. Principal Line—Atoms and Molecules.
Thesis—Chemical Dynamics.
2. Subordinate Lines { 1. Spectrum Analysis.
 } 2. Heat.

SPECIAL COURSE IN HISTORY.

1. Principal Line—Rise of Christianity.
Thesis on Pagan Influence upon Christian Theology.
2. Subordinate Lines { 1. Decline and Fall of Rome.
 } 2. Outline History of Western Europe
 } up to 1453.

SPECIAL COURSE IN PHILOSOPHY.

1. Principal Line—Development of Western Philosophy.
Thesis—Relations of Eastern Philosophy to Western
Philosophy.
2. Subordinate Lines. { Inductive Logic.
 } Deductive Logic.

SPECIAL BIBLICAL AND THEOLOGICAL COURSE.

1. Principal Line—Biblical Literature.
2. Subordinate Lines—Armenian and Calvinistic Theology—
Agreements and Differences.

The above are only a few of the Special Courses which have

been arranged. Persons desiring to carry forward work in Biology, Literature, Social Science, Constitutional History, Political Science etc., will be provided with formal schemes for their researches.

SECTION XIX.

CONSERVATORY OF MUSIC—GENERAL INFORMATION.

It is the chief aim of the Conservatory to teach both the Science and Art of Music in such a thorough and systematic way that they shall be, *what they so often are not, of available and practical* use to the student after having completed a course. Great care is taken to secure a correct technique; also a proper position of the person, hand and arm, while the pupil is seated at the instrument.

Careful attention is given to the development of the muscles of the hand and fingers, and in acquiring flexibility of fingers, wrist, etc. In short, the methods which have for so many years made the German Conservatories famous, are closely adhered to. Much time is given to the cultivation of a taste for the best forms of classic music.

The Course in Music consists of Seven Grades, each based upon such studies and selected pieces as form the standard of the various degrees of proficiency at the best institutions of a similar kind. Upon entering, each student will be examined and graded accordingly, while promotion is not limited by time, but depends entirely upon the progress of the student. A student of ability can with proper application almost finish the first three grades in one year. In most cases four years will be sufficient to complete the course. It is advisable that students should begin music with the determination of completing at least a certain part of the course, if not the whole.

Instruction is given both in private lessons and by "class

teaching," according to the preference of the student. The classes consist of either two or three pupils.

The courses have been arranged so as to secure the greatest thoroughness and proficiency in music as a science and an art. Students are admitted for a single term, but all will see the advantage of taking a full course of instruction, including not only the ordinary lessons given on the piano, organ, or violin, but in harmony and counterpoint. The literary studies of the course have been selected with reference both to sound and varied scholarship and the accomplishments of learning.

Aside from the regular lessons given at the instrument there is a weekly meeting of the entire Conservatory in the catechism of music. At these gatherings instruction is given which there is no time to impart in connection with individual or class lessons. There are also weekly rehearsals to drill and fit for public playing. The student thus gains confidence, his faults are corrected, and he is prepared to use to the best advantage the knowledge acquired.

Instructors of superior ability are employed to teach in connection with any of the instruments used for orchestral or band music. It is our aim to make the College a center of interest and culture for the music-loving public, providing the best instruction for all who aspire to proficiency in any line of musical excellency.

As a part of the educational facilities of the Conservatory there is also maintained, in efficient organization, a complete Orchestra. In this Orchestra there are at present nearly fifty performers.

Although orchestral music is generally transferred to the piano, yet the full effects of the Orchestra cannot be given by that instrument. Orchestral music is written in a special form and character, both to embody the idea of the composer, and also with reference to the instruments that are to express and interpret that idea. These instruments have a tone-color peculiarly their own, which is lost by transference of the music to the piano. The Orchestra thus opens to the students of music

an entirely new field of instruction and culture which is of great value. It is, however, only the more advanced scholars who can advantageously avail themselves of its benefits, and only these, therefore, are allowed to become members.

During each term there are two or three Public Recitals, which are especially intended to improve the taste for, and promote the appreciation of, the best masters. Haydn, Mozart, Beethoven, Bach, Mendelssohn, and Schumann, furnish the broadest subjects to express the depths and grandeur of musical conception. The students are required to take an active part in these exercises. Also Recitals are given at the College by some of the most eminent musicians of Boston and other eastern cities, so that the student shall not fail to come into relation with the highest power of the art of music.

For all students desiring to study the principles of Vocal Music, a rudimental class is organized, continuing through the year, the tuition for such instruction being merely nominal—to provide music for the most efficient movement of the class. After completing the study of the rudiments the students are admitted into the general chorus in which there is no tuition. The work of the chorus consists of the rendition of the higher forms of vocal music. The College maintains a Glee Club which has gained considerable celebrity.

Voice culture is made a specialty. By referring to the list of students it will be seen that this department is very rapidly growing. Very many persons who enter upon the study of the principles of vocal music or join the chorus class, come to appreciate the desirableness of special voice training. All who desire to fit themselves for singing in church choirs, for teachers of vocal music, or for professional singing in any capacity, can here obtain the instruction and culture desired.

The music students are organized into a Theory Class, which meets each week for special instruction.

Persons are admitted into the Four Years' Musical Course directly on application, and are classified according to their proficiency in music. To be admitted into the Six Years'

Course of Music and Literary studies, they must pass examination in geography, arithmetic, grammar, orthography, and penmanship, and pay a matriculation fee of five dollars.

The Degree of Bachelor of Music will be granted to such students as complete the *Six Years'* Course, or any of the Collegiate courses in addition to Music. Students who complete the Four Years' Course will receive a Diploma.

The Courses of Study are printed farther on in the Year-Book.

The Charges for Tuition will be found on a subsequent page.

The foregoing statements, so far as they relate to instrumental music, refer specially to study in connection with the piano, or piano and organ. We are, however, giving much attention to instruction on the violin. From no instrument can more charming music be drawn, nor music which, if properly used, is more refining. A special course of study with the violin is printed in another part of the book.

SECTION XX.

SCHOOL OF PAINTING—GENERAL INFORMATION.

The aim of this department is to conduct the pupil with thoroughness from the simplest rudiments up to a knowledge of the higher branches of art, giving as far as possible a perfect understanding of all the work entered upon. The time has come when everybody is expected to have some knowledge of the fine arts; and one year, or even one term, given to the study may prove a source of both pleasure and profit. In connection with this there is the incentive drawn from the fact that the product of the labor bestowed will remain as a possession to exert an elevating influence upon all who will look upon it. For certainly no branch of study can be more refining than that which calls attention to, and increases admiration for, all that is beautiful which God has made.

The course of study as printed elsewhere in this volume will

best explain the character and range of work. It will be seen that the student receives special instruction in free-hand and illustrative drawing, mechanical drawing, sketching from nature, fine map drawing, object drawing, linear and aerial perspective; landscape, figure, flower and fruit painting, in oil, water colors, and French pastel; decorative painting and designing; the mixing of all shades from a few primary colors to all the art requires.

Great emphasis is put upon sketching and drawing, both in preparing pictures for the paint, and in sketching from nature, life, and objects. This, though a rare accomplishment, is by no means difficult to attain if the student has ambition and persistency. It is within the reach of all, not requiring genius or remarkable talent, only love for the work, as is true in anything in which we succeed.

The study at the beginning will usually consist in copying from some one of the pictures selected—usually a small landscape—and, during the first term, a student of ordinary ability can finish from three to five paintings, which paintings, if thoughtfully executed, could usually be sold for twice the tuition paid, though in most cases they are kept to ornament the home.

The Degree of Bachelor of Painting will be granted to such students as complete the full painting course, or any of the collegiate courses in addition to painting. Students who pass a satisfactory examination in painting (including sketching, drawing, and perspective), without pursuing the literary studies, will receive a Diploma.

It will be seen that instruction is given in landscape work, portrait painting, pen drawing, etching, charcoal work, decorative art, etc.

The charges for instruction—which are moderate—will be found on another page.

SECTION XXI.

ACADEMIC DEPARTMENT.

No scholarship is symmetrical and complete without the study of the languages. Many, however, feel that they cannot take the time to pursue a full course. For this class we propose to provide the most ample opportunities to acquire a knowledge of such branches as they desire to master without taking up the languages. Therefore, an Academic Department—distinct from the preparatory and the college—has been organized. The following branches of study are taught:

Arithmetic.	Civil Government.
Algebra.	Grammar.
Geometry.	Analysis.
Trigonometry.	Word Analysis.
Surveying.	English Composition.
Calculus.	Rhetoric.
Physiology.	Elocution.
Zoology.	United States History.
Biology.	European History, ancient, medieval, and modern.
Botany.	Roman and Grecian History.
Astronomy.	History of Civilization.
Chemistry.	American Literature.
Physics.	English Literature, with other
Physical Geography.	English studies below the
Descriptive Drawing.	College Junior year.
Mechanical Drawing.	

Students are admitted into this department whenever they are prepared to take up and successfully carry forward the work. They must not be less than twelve years of age, and must have such knowledge of arithmetic and English grammar as will enable them to do good work in these classes.

Until recently students pursuing special studies were catalogued as belonging to the Preparatory School, and published accordingly. Hereafter only those students who study the languages will be classified in the Preparatory School or College. Irregular students, or those pursuing partial courses, will be catalogued as Academic students unless they are studying some foreign language.

The expenses are the same as in the Preparatory School.

SECTION XXII.

COMMERCIAL DEPARTMENT.

The object of this department is two-fold:

1. It gives an extensive practical course to those who wish to engage in business pursuits or teach the commercial branches.
2. It affords an opportunity to all students at their option to take commercial studies as a part of a literary course, and receive credit for the same.

The department is fitted with a series of counting-house offices, each of which is furnished with an expensive set of books, desks with locks, and all other necessary equipments.

The work is under the management of M. L. Miner, graduate of Rochester (N. Y.) Business University, a teacher of five years' experience, and formerly Principal of the Theory Department in the National College of Commerce, Philadelphia, Pa. The assistants are specialists and fully equal to the positions they occupy.

The Science of Accounts: The principles of debit and credit are first fully demonstrated, and the student is made familiar with all kinds of commercial forms and the laws relating thereto. Then this knowledge is brought into practical use by keeping books adapted to wholesale and retail merchandising, shipping and commission, brokerage, farming, manufacturing, banking, etc., etc.

In the practice work each student becomes a business manager, actually buying and selling goods for cash, notes, drafts, certificates of deposit, orders on account, etc. He deals in securities, forms partnerships, drawing up articles of agreement, transfers real estate by deed, makes out chattel mortgages, leases, and bills of sale; at all times keeping a perfect set of books.

There is in the minds of some the idea that a Commercial Course is of *no practical value*, because every business firm has a particular form of book-keeping, and that there are scarcely any two alike. By experience and observation we know this to

be false reasoning. The principles of book-keeping are as real and tangible as those of any other branch of mathematics. When a student has fully mastered the subject, become perfectly familiar with several of the best forms of practical account-keeping, as now used in different kinds of business, and is experienced in handling all kinds of commercial paper, it is an easy thing for him to understand at a glance the manner in which any particular set of books is kept, and in a short time be able to do the work in the desired way.

Furthermore, the Principal of this department can point to cases in which students have gone directly from his school to take charge of the books in extensive mercantile establishments, sometimes changing the books from single to double entry, and doing work that had baffled old book-keepers.

Book-keeping and penmanship are not considered the only studies for a well-rounded business course; hence we have added those branches that we deem necessary for a citizen to understand, and indispensable to a person engaged in commercial pursuits. We have arranged the following course of study:

FIRST TERM.	Book-keeping.	SECOND TERM.	Business Practice.
	Penmanship.		Rapid Business Writing.
	Commercial Arithmetic.		Commercial Arithmetic.
	Civil Government.		Commercial Law.
	Commercial Forms.		Letter Writing.
THIRD TERM.			Business Practice and Banking.
			Rapid Business Writing.
			Commercial Arithmetic.
			Political Economy.
			Box Marking.
			Reviews.

If a person has a fair knowledge of the English branches upon entering, the course can usually be completed in the school year. In exceptional cases it may be accomplished in a little less time.

Students are assigned permanent seats, where they receive instruction during each session, amounting to six hours daily.

No candidate for graduation who has not a good elementary knowledge of the English branches will receive a diploma with-

out passing examinations in U. S. History, Grammar, Geography and Spelling.

It is for our interest to have our students secure good positions, and, *when they deserve it* every effort will be made to assist them. We judge what a student *will do* by what he *does* while pursuing his studies.

We are always pleased to have business men apply to us for clerks or book-keepers. We will do the best we can to furnish them with suitable help, and they may be assured that we recommend none but the worthy.

SECTION XXIII.

EXPENSES IN THE VARIOUS DEPARTMENTS OF THE INSTITUTION.

The Institution does not bid for patronage by claiming that the expenses are less than at any other college. It starts out to supply that which is necessary for the best scholarship. A good deal of money is expended each year on appliances in all departments. The purpose is to allow of no defect which will stand in the way of scholarship. Securing this end an effort is made to keep the expenses at the lowest point consistent with the attainment of the end for which the student is in college. Consequently no extra charges are made—the general schedule covers them all. The Institution does not conduct a boarding hall, but the students are able to make arrangements for board at figures as moderate as college boarding halls ever charge, and, as a rule, obtain board of a better quality than is ordinarily produced on the old plan. Table board in private families usually costs from \$2.25 to \$2.50 a week. A large number of students organize boarding clubs, enabling them to reduce the rate to \$2 or \$1.75 a week. This is now quite a popular method of providing for board. There are other students who board themselves, expending perhaps one-half the cost of club board, and some even less. Furnished rooms can

be rented usually at fifty or seventy-five cents a week for each student.

The following is a schedule of charges made by the Institution. It will be seen that, aside from music, painting, and commercial studies, the instruction is practically free :

PREPARATORY SCHOOL.

Tuition.....	Free
Incidental Fee, per term.....	\$ 5 00

ACADEMIC DEPARTMENT.

Same as in Preparatory School. When classified in the College the ordinary matriculation fee is charged.

COLLEGE.

Matriculation Fee, paid but once.....	\$ 5 00
Tuition.....	Free
Incidental Fee per term.....	5 00
Graduation Fee.....	5 00

Students in Laboratory practice charged cost of material used.

Students using the microscope pay a small rent.

CONSERVATORY OF MUSIC.

Matriculation in the Four Years Musical Course.....	Free
Matriculation in the Six Years Musical and Literary Course.....	\$ 5 00
Instruction in Chorus Class.....	Free
Instruction in Rudiments of Vocal Music, per term.....	1 00
Incidental Fee, per term.....	2 50
Tuition, in class of three—on piano or organ.....	12 00
Tuition, in class of two—on piano or organ.....	16 00
Tuition, private lessons—on piano or organ.....	20 00
Tuition in Harmony—once a week.....	4 00
Voice culture—class of two.....	5 00
Voice culture—private lessons.....	8 00
Instruction on violin, cello, etc.....	9 00
Instruction on cornet, clarionet, flute, etc.....	6 00
Membership in the Orchestra.....	Free
Membership in the Band.....	Free
Use of piano or organ—per hour, for term.....	2 00
Graduating Diploma.....	3 00
Students in the Six Years Course in which Literary Studies are taken in connection with Music, pay, as incidental fee, per term.....	5 00
The same, for Graduating Diploma.....	5 00

To students receiving instruction on the piano or organ who have not completed the Second Grade, there is a reduction of 25 per cent on the above rates.

SCHOOL OF PAINTING.

Incidental Fee per term.....	\$ 2 50
Tuition in oil painting, water color, India ink, etc., per term.....	20 00
Single lessons.....	50
Working in brass—same rate as above.	

In no case does the incidental fee exceed \$5.00 per term, though the student may be pursuing studies in several departments at the same time.

It will also be seen that no tuition is charged for instruction in literary studies, tuition being required only for instruction in music, painting, or commercial studies.

The matriculation and graduating fees are only one-half as much as charged by many institutions.

It will also be perceived that the charges for instruction in music depend on the class to which the student belongs, and the amount of instruction received. The schedule of prices ranges all the way from \$4 to \$20 or \$30 a term. It is at the option of the student.

COMMERCIAL DEPARTMENT.

The following prices are greatly reduced from former rates and will take effect September, 1887 :

Tuition, full course, including all studies, as per schedule.

One term, in advance.....	\$15 00
Two terms, in advance.....	28 00
Three terms, in advance.....	40 00

Besides the regular course there will be classes to accommodate those who wish to take special work in this department, as follows:

Book-keeping, per term, five hours a week.....	\$ 5 00
Book-keeping, per term, three hours a week.....	4 50
Penmanship, per term, five hours a week.....	3 00
Penmanship, per term, three hours a week.....	2 50
Commercial Arithmetic, three hours a week.....	2 50
Commercial Law, two hours a week.....	2 00

Political Economy, two hours a week.....	2 00
Graduating Diploma.....	3 00

BOOKS AND STATIONERY.

The books and stationery required in the Commercial Department are for sale in the School at very low prices, and for the entire course will cost \$10 or \$12.

Text Books—Rochester Complete Book-keeping, Packard's Commercial Arithmetic, Townsend's Commercial Law.

SECTION XXIV.

COURSES OF STUDY IN THE PREPARATORY SCHOOL.

FIRST YEAR.

CLASSICAL.		LATIN	SCIENTIFIC.		SCIENTIFIC.		ENGLISH.	
Arithmetic	5	Arithmetic	5	Arithmetic	5	Arithmetic	5	
English Grammar	5	English Grammar	5	English Grammar	5	English Grammar	5	
French	5	French	5	French	5	U. S. History	5	
Arithmetic	5	Arithmetic	5	Arithmetic	5	Arithmetic	5	
English Grammar	5	English Grammar	5	English Grammar	5	English Grammar	5	
French	5	French	5	French	5	Word Analysis	5	
Arithmetic	5	Arithmetic	5	Arithmetic	5	Arithmetic	5	
English Analysis	5	English Analysis	5	English Analysis	5	English Analysis	5	
and Composition	5	and Composition	5	and Composition	5	and Composition	7	
French	5	French	5	French	5	English Phonetics	3	

SECOND YEAR.

CLASSICAL.		LATIN	SCIENTIFIC.		SCIENTIFIC.		ENGLISH.	
Rhetoric	5	Rhetoric	5	Rhetoric	5	Rhetoric	5	
Algebra	5	Algebra	5	Algebra	5	Algebra	5	
German	5	German	5	German	5	German	5	
Civil Government	5	Civil Government	5	Civil Government	5	Civil Government	5	
Algebra	5	Algebra	5	Algebra	5	Algebra	5	
German	5	German	5	German	5	German	5	
English History	5	English History	5	English History	5	English History	5	
Algebra	5	Algebra	5	Algebra	5	Algebra	5	
German	5	German	5	German	5	German	5	

THIRD YEAR.

CLASSICAL.		LATIN		SCIENTIFIC.		SCIENTIFIC.		ENGLISH.	
Latin	5	Latin	5	Latin	5	American Literature	4		
Physical Geography	5	Physical Geography	5	Physical Geography	5	Physical Geography	5		
Modern History	3	Modern History	3	Modern History	3	Modern History	3		
Physics	3	Physics	3	Physics	3	Physics	3		
<hr/>									
Latin	5	Latin	5	Latin	5	Map Drawing	2		
German	3	German	3	German	3	American Literature	3		
Modern History	3	Modern History	3	Modern History	3	German	3		
Physics	4	Physics	4	Physics	4	Modern History	3		
						Physics	4		
<hr/>									
Latin	5	Latin	5	Latin	5	English Literature	5		
Botany	4	Botany	4	Botany	4	Botany	4		
Medieval History	3	Medieval History	3	Medieval History	3	Medieval History	3		
Illustrative Drawing	3	Illustrative Drawing	3	Illustrative Drawing	3	Illustrative Drawing	3		

FOURTH YEAR.

CLASSICAL.	LATIN	SCIENTIFIC.	SCIENTIFIC.	ENGLISH,	
Latin	4	Latin	4	French	5
Greek	5	English Literature	4	English Literature	4
Geometry	4	Geometry	5	Geometry	4
Roman History	3	Roman History	3	Roman History	3
Latin	4	Latin	4	French	5
Greek	5	Drawing	4	Drawing	4
Geometry	2	Geometry	2	Geometry	2
Physiology	5	Physiology	5	Physiology	5
Latin	5	Latin	5	French	5
Greek	5	German	4	German	4
Geometry	3	Geometry	3	Geometry	3
Ancient History	3	Ancient History	3	Ancient History	3

SECTION XXV.

COURSES OF STUDY IN THE COLLEGE.

FRESHMAN YEAR.

CLASSICAL.	LATIN SCIENTIFIC.	SCIENTIFIC.	ENGLISH.
Latin. 4	Latin 4	Modern English 4	Modern English 4
Greek. 5	Algebra 5	History 4	History 4
Astronomy 3	Astronomy 3	Algebra 5	Advanced English 5
French or German 3	French or German 3	Astronomy 3	Grammar 5
		French or German 3	Astronomy 3
			French or German 3
Latin 3	Latin 3	Microscopy 3	Microscopy 3
Greek 4	American Literature 3	American Literature 3	Early English 3
Astronomy 3	Astronomy 3	Astronomy 3	Astronomy 3
Geometry 4	Geometry 4	Geometry 4	French or German 2
French or German 2	French or German 2	French or German 2	Electives 4
Latin 5	Latin 5	Botany 3	Botany 3
Greek 4	Geometry 4	Geometry 4	Early English 3
Zoology 4	Zoology 4	Zoology 4	Zoology 4
French or German 3	French or German 3	French or German 3	French or German 3
			Electives 2

SOPHOMORE YEAR.

CLASSICAL.		LATIN SCIENTIFIC.		SCIENTIFIC.		ENGLISH.	
Latin	3	Latin	3	Biology	2	Biology	3
Greek	5	Inductive Logic	4	Inductive Logic	4	Anglo-Saxon	3
Trigonometry	5	Trigonometry	5	Trigonometry	5	Modern Conti-	
Electives	2	Electives	3	Electives	3	mental History	3
						Advanced Rhet-	
						oric	4
						Electives	2
Latin	5	Latin	5	Physics	3	Anglo-Saxon	3
Greek	4	General Geometry	5	General geometry	5	Modern Conti-	
History of Civili-	3	History of Civili-	3	History of Civili-	3	mental History	3
zation	3	zation or Physics	3	zation	3	History of Civili-	
Electives	3	Electives	2	Electives	4	zation	3
						Trench	2
						Electives	4
Latin	3	Latin	3	Physics	3	Anglo-Saxon	3
Greek	4	Calculus	5	Calculus	5	Trench	3
History of Civili-	3	History of Civili-	3	History of Civili-	3	History of Civili-	
zation	3	zation or Physics	3	zation	3	zation	3
Electives	5	Electives	4	Electives	4	Electives	6

JUNIOR AND SENIOR YEARS.

This table contains, in addition, all the Elective studies of preceding years :

PHILOSOPHY.		THEOLOGY.		LATIN.		GREEK.		NATURAL SCIENCE	
psychology	5	Old Testament		Cicero—		Epic Poetry†	3	General Chem-	
History of Phy-		History*	3	De Senectute	2	Metres†	1	istry	5
losophy†	3	Greek Testa-		De Amicitia	2	Composition†	5	General Biolo-	
		ment	2	Horace—Odes	2	Drama*	3	gy	3
		Hebrew	2	Composition	1	Metres*	2	Sanitary Sci-	
				Cicero—		Philology*	2	ence†	3
				Tusculan		Literature*	1		
				Disputations	3				
				Lucretius	2				
Psychology	3	New Testament		Latin literature	2	Epic Poetry†	3	Qualitative	
History of Phy-		History*	3	Horace—Sat-		Composition†	2	Chemistry	5
losophy†	5	Greek Testa-		ires and Epis-		Philology	1	Microscopy	3
Theism*	5	ment	2	cles	2	Drama*	2		
		Homiletics	2	Composition	1	Literature*	3		
		Hebrew	2	Plautus	3	Mythology*	1		
				Pliny—Epistles	2				
				Cicero—Epistles	2				
Moral Science†	5	Church history	4	Livy	3	Lyric Poetry†	2	Mineralogy	3
Logic*	4	Evidences of		Terence	2	Composition†	2	Organic Chem-	
		Christianity†	4	Tacitus	2	Metres†	1	istry	2
		Greek Testa-		Seneca	2	Plato*	4	Animal biology	3
		ment†	2	Christ'n hymns	1	Literature*	2	Vegetable Biol-	
		Homiletics*	2					ogy	3
		Hebrew	2					Geology	4

Studies marked † will be taught during 1887-8.

Studies marked * will be taught during 1888-9.

JUNIOR AND SENIOR YEARS—CONTINUED.

HISTORY, POLITICS, AND ECONOMICS.	ENGL'SH.	MATHEMATICS, PURE & APPLIED.	MODERN LAN- GUAGES.
Modern Conti- nental History* 3	Anglo-Saxon 3	Calculus 3	French Lit. of the 17th century 2
Political Econo- my† 3	History of English Literature† 3	Surveying 3	French Lit. of the 18th century 2
Political Science* 2	Science of Rhet- oric* 4	Astronomy 3	French Lit. of the 19th century 2
U. S. Constitution- al History† 2	American Litera- ture—Study of Masterpieces 4	Quaternions 3	Italian 2
Research Class in Politics and Economics 2	English Lit. Study of Masterpieces 4		Spanish 2
Modern Conti- nental History* 3	Early English† 5	Calculus 3	French Lit. of the 17th century 2
History of Civili- zation† 3	Anglo-Saxon* 3	Physics 3	French Lit. of the 18th century 2
Political Econo- my† 3	History of English Literature† 3	Astronomy 3	French Lit. of the 19th century 2
Political Science* 3	Trench on Words* 2		Italian and Span- ish, two courses each.
U. S. Constitution- al History† 3	American Litera- ture—Study of Masterpieces 3		Martin Luther and his contem- poraries 2
Research Class in Politics and Economics 2			
History of Civili- zation† 3	Early English† 3	Physics 3	Darmesteter's Morceau choisis des ecrivains du XVIe siecle 2
International Law* 4	Anglo-Saxon* 3	Modern H. Alge- bra, including Determinants 2	Italian and Span- ish, two courses each.
Constitutional his- tory of England† 4	Trench on Words* 3	Astronomy 3	Das Nibelungen- lied, etc 2
Research Class in Questions of the Day 2	English Litera- ture—Study of Masterpieces 5		
	Shakspeare 2		

The foregoing tabulated courses of study may be varied to some extent from time to time at the discretion of the Faculty. They are printed to show the kind and range of work, and if not literally followed an equivalent will be substituted. The attention of the student is directed to the outline of the work on pages which soon follow.

SECTION XXVI.

COURSES OF STUDY ADJUSTED TO THE WORK
OF THE HIGH SCHOOLS.

FOURTH YEAR PREPARATORY.

Point of entrance for students who have completed a Three Years' High School Course:

CLASSICAL.	LATIN SCIENTIFIC.	SCIENTIFIC.	ENGLISH.
Virgil. Anabasis. Geometry. Civil Government.	Virgil. American Literature Geometry. Civil Government or Bookkeeping.	French or German. American Literature Geometry.	American Literature Geometry. Civil Government or Bookkeeping.
Virgil. Anabasis. Geometry. Physiology.	Virgil. American Literature Geometry. Physiology.	Trench on Words. French or German. American Literature Geometry. Physiology.	Trench on Words. American Literature Geometry. Physiology.
Virgil. Anabasis. Drawing. English Literature.	Virgil. Zoology. Drawing. English Literature.	English Literature. Zoology. Drawing. Trench on Words.	English Literature. Zoology. Drawing. Trench on Words.

FRESHMAN.

Point of entrance for students who have completed a Four Years' High School Course :

CLASSICAL.	LATIN SCIENTIFIC.	SCIENTIFIC.	ENGLISH.
Cicero, or Alternative. Lysias. Astronomy. German.	Cicero, or Alternative. English Literature. Astronomy. German.	Advanced English Grammar. English Literature. Astronomy. German.	Advanced English Grammar. English Literature. Astronomy. French or German.
Horace, or Alternative. Demosthenes. German. Astronomy.	English History. Horace, or Alternative. Microscopy. German. Astronomy.	English History. Microscopy. German. Astronomy.	English History. Microscopy. French or German. Astronomy or Early English.
Livy, or Alternative. Demosthenes. German. Botany or Geometry.	Livy, or Alternative. Inventional Geometry. German. Botany.	Elective. Inventional Geometry. German. Botany.	Elective. French or German. Early English. Botany.

SOPHOMORE.

CLASSICAL.	LATIN SCIENTIFIC.	SCIENTIFIC.	ENGLISH.
Cicero, or Alternative. Greek. Trigonometry. Modern Constitutional History.	Cicero, or Alternative. Inductive Logic. Trigonometry Modern Constitutional History, or Biology.	Inductive Logic. Trigonometry. Biology. Modern Constitutional History.	French. German. Anglo-Saxon. Advanced Rhetoric. Modern Constitutional History.
Plautus, or Alternative. Greek. Modern Constitutional History. History of Civilization.	Plautus, or Alternative. General Geometry. Modern Constitutional History. Physics.	General Geometry. Modern Constitutional History. Physics. Alternatives.	French. German. Modern Constitutional History. Anglo-Saxon. Alternatives.
Latin Hymns, or Alternative. Greek. History of Civilization. Calculus, Botany, or Physics.	Latin Hymns, or Alternative. Calculus. History of Civilization. Physics.	Physiological Botany. History of Civilization. Calculus. Physics.	French. German. History of Civilization. Anglo-Saxon.

It is not necessary to tabulate the studies of the JUNIOR and SENIOR YEARS, as, with the exception of Psychology, Logic, and one term of Chemistry, they are elective, and are found elsewhere in the Year-Book. *Any branches of study not found in the above scheme, which are printed in the General Schedule of College Work, can be elected* for these two years at the discretion of the student, subject to the conditions stated in said Schedule.

In prosecuting the studies of these years a large amount of RESEARCH work will be carried forward, which has already become very popular in the Institution, and productive of the best results in the efforts to gain the most thorough scholarship.

It should here be stated that the courses printed above will necessarily, in some cases, undergo slight modifications, in view of the fact that the Courses pursued in the different High Schools are not wholly alike. The modifications made will meet the wants growing out of the diversity in such Courses, but the principles embodied in the foregoing scheme of work will be rigidly maintained.

During these two years the student must perform an amount of work equal to the average of fifteen hours a term.

SECTION XXVII.

BRIEF OUTLINE OF WORK PROVIDED FOR IN THE TABULATED COURSES OF STUDY.

MODERN LANGUAGES.

FRENCH.

I. The principal aim of this course will be the acquisition of a knowledge of the essentials of French grammar, and of an ability to translate at sight ordinary French prose. Books to be used: Bôcher's Reader; Erckmann-Chatrian, *Le Conscrit de 1813*; George Sand, *François le Champi*, or their equivalents—three terms. The grammar part will be taught by talks.

II. The object of this course is to learn to read French without translating it into English. The work in class will be carried on in French as much as possible. Books to be used: Augier et Sandeau, *Le Gendre de M. Poirier*; Alexander Dumas, *Le Capitaine Pamphile*; George Sand, *La Petite Fadette*—Spring Term.

III. In this course students will read Molière's *Le Misanthrope* and *Le Tartuffe* in class, and they will be required also to bring into class written resumés of other plays of Molière. Fall Term.

IV. Racine's *Athalie* and *Berenice* will be read and commented upon in class, and a few plays will be read as home-reading. Winter Term.

V. Some of Corneille's plays will be read and explained in French. Some of La Fontaine's fables will be committed to memory. During this term some attention will be given to the historical part of French grammar.

VI. In this course, which extends over two terms, the French literature of the 17th century will be discussed. Some of the works of the French writers of this period will be read at home.

VII. The spring term will be devoted to studying historical French grammar, based on Brachet's *Grammaire Historique de la langue Française*.

GERMAN.

I. The elementary course will aim at reading ordinary German prose at sight, and at getting a knowledge of the essential part of German grammar. Books to be used: Zschokke's *Nenjahrsnacht*; Eichendorff's *Taugenichts*; Fougue's *Undine*; Some of P. Heyse's shorter stories.

II. Historical works will be read, such as are to be found in the Nene Plutarch; Freytag's *Bilder aus neuer Zeit*. Winter Term.

III. Selections from the works of Goethe, Schiller, Lessing, etc., will be read and discussed without translating the lessons. Spring Term.

IV. Selections from Luther's writings. Talks will be given on the history of German grammar, based on Brandt's historical German grammar. Winter and Spring Terms.

V. Middle high German will be taken up in this course. The grammar will be taught by talks. The class will translate into modern German Hartmann von der Aue's *Der arme Heinrich*, *das Nibelungenlied*, etc.

ITALIAN.

I. Toscani's Grammar. Composition. I Promessi Sposi.

II. Grammar. Selections from Ariosto, Boccacio, Petrarca and Dante.

SPANISH.

I. Jose's Grammar. Composition. El Eco de Madrid, Gil Blas.

II. Grammar. Selections from Calderon, Lope de Vega. Cervantes.

ANCIENT LANGUAGES.

LATIN.

The Roman method of pronouncing Latin is used.

Required.—I. The work of the first year (3d Preparatory) comprises the translation of the first Book of Cæsar's Gallic War; the memorizing of selected passages and idioms; the reading at sight in class of passages afterwards carefully prepared; the translation of Latin sentences into English, and of English into Latin; and an outline study of Latin Etymology and Syntax.

The text books in this year are Comstock's First Latin Book, Kelsey's Cæsar, and Harkness' Standard Latin Grammar.

II. In the second year (4th Preparatory) Cæsar is read the first term and part of the second, (three Books); Sallust's Cataline follows Cæsar in the second term, and is continued two hours a week in the third term, with Latin Prose Composition three hours a week.

Text books, Kelsey's Cæsar, Harkness' Sallust, Jones' Latin Prose Composition.

FRESHMAN YEAR.

III. Cicero, (three Orations)—first term—four hours. Harkness.

Cicero (three Orations)—second term—three hours. Harkness.

Composition—third term—two hours. Jones.

Ovid (extracts from the *Metamorphoses*)—third term—three hours. Lincoln.

SOPHOMORE YEAR.

IV. Virgil (*Æneid*, Books I and II)—first term—three hours. Greenough.

Virgil (*Æneid*, Books III, IV and V)—second term—five hours. Greenough.

Virgil (*Æneid*, Book VI, *Eclogues*)—third term—three hours. Greenough.

Elective.—1. Cicero (*Essays*, *De Senectute* and *De Amicitia*) first term—two hours.

2. Horace (*Odes*)—first term—two hours.

3. Composition—first term—one hour.

4. Latin Literature—with selections from representative authors from the rise to the end of the classical period—second term—two hours.

5. Horace (*Ars Poetica* and selections from the *Satires* and *Epistles*)—second term—two hours.

6. Composition—second term—one hour. [6 can only be taken by students who have already had 3.]

7. Livy (Extracts from Books I to V, or Book XXI)—third term—three hours.

8. Terence (*Andria* or *Adelphi*)—third term—two hours.

9. Cicero (*Tusculan Disputations*, Book I)—first term—three hours.

10. Lucretius—first term—two hours.

11. Plautus (*Captivi* and one other Comedy at sight)—second term—three hours.

12. Cicero (*Epistles*); Pliny (*Epistles*); second term—two hours.

13. Tacitus (*Annals*)—third term—two hours.

14. Seneca (*Moral Essays*)—third term—two hours.

15. Christian Hymns—third term—one hour.

GREEK.

I.

1. Historical Selections—Xenophon and Herodotus.
4. Demosthenes.
7. Homer's Iliad.
10. Greek Drama.
13. Greek Testament.
16. Greek Composition.
19. Hebrew.
22. Philology.

II.

2. Historical Selections—continued.
5. Plato's Apology and Crito.
8. Homer's Odyssey.
11. Greek Drama.
14. Greek Testament.
17. Mythology.
20. Hebrew.
23. Philology.

III.

3. Lysias and Isocrates.
6. Thucydides—Speeches in.
9. Pindar.
12. Plato, Phædo, or the Tenth Book of the Laws.
15. Greek Testament.
18. Greek Literature.
21. Hebrew.
24. Philology.

The above courses in Greek, and in Hebrew, are arranged according to the succession of terms in which they regularly come—"I," Fall Term: "II," Winter Term; and "III," Spring Term. The numerals, 1, 2, 3, indicate the courses of the Freshman year; 4, 5, 6, those of the Sophomore year; 7, 8, 9, those of the Junior year; 10, 11, 12, those of the Senior year. From 13 on, the courses are collateral or elective. Those from 7 to 12, that is, of the Junior and Senior years, are also elective. Course 1 is always to be taken first. To find the number of hours a week allotted to each course in each term, turn to the "Courses of Study."

The methods used in teaching are based upon a firm conviction that it is *not* best to make the work dry and difficult; that

it is best to aim at a good reading knowledge for the student; to introduce him early to a large amount of reading; and to let his knowledge of the language grow, largely, out of the text itself, rather than be confined to the outside help of books. More minute study comes later, as the aptitude for it is developed.

Careful attention is given to matters of history, archæology, and mythology, related to the texts read.

There is, everywhere, a free use of maps and charts, of which the Department has a good and constantly increasing supply.

Collateral research is required at every stage of all parts of the work.

Philology is one recitation a week, running through the year, beginning with the facts, and proceeding from them to the principles.

In Hebrew the same principles and methods govern as in Greek.

MATHEMATICS.

The Preparatory work covers the completion of arithmetic, three terms in algebra, and two terms in geometry.

The following courses are provided in the collegiate department:

1. Advanced Algebra—a course of *five hours*. Fall Term.
2. Solid and Spherical Geometry—a course of *four hours*. Winter Term.
3. Application of Algebra to Geometry, and Original Geometrical Demonstration and Solution—a course of *four hours*. Spring Term.
4. Plane and Spherical Trigonometry—a course of *five hours*. Fall Term.
5. General Geometry—a course of *five hours*. Winter Term.
6. Differential and Integral Calculus, with their applications to Geometry and Physical Science—a course of *five hours*. Spring Term.
7. Advanced Calculus—a course of *three hours*. Fall Term.
8. Advanced Calculus—a course of *three hours*. Winter Term.
9. Modern Higher Algebra, including Determinants—a course of *two hours*. Spring Term.

10. Quaternions—a course of *three hours*. Fall Term.

Courses 1, 3, 5 and 6, may be elected by students in whose General Courses they are not required studies.

ASTRONOMY AND APPLIED MATHEMATICS.

ASTRONOMY.

1. A course of three hours, during the fall term, in descriptive astronomy.

2. A course of three hours during the winter term, being a continuation of the above, with special attention to the description and use of astronomical instruments and the simpler mathematical reductions.

Elective.—A course of three hours per week during the entire year, including a large amount of practical work in the Observatory, solar and lunar eclipses, observations and reductions for obtaining time, latitude, longitude, etc., etc.

Students desiring to do more advanced work will be given special direction in various lines of investigation, and will be granted free use of the observatory equipment in the prosecution of their studies.

PHYSICS.

1. A course of three hours during the fall term in elementary work covering Mechanics, Hydrostatics and Pneumatics.

2. A course of four hours during the winter term in Electricity and Magnetism, Optics, Heat and Acoustics.

3. With the Sophomore class, a course of three hours in the winter term and three hours in the spring term, largely mathematical in treatment, and covering the same general outline of topics as in the above elementary course.

Elective.—A course of three hours extending through the entire year, and covering such topics as may be especially chosen by students electing advanced work in physics.

SURVEYING.

Elective.—A course of three hours during fall term in practical surveying. Land, Railroad, Leveling, Topographical Plotting, Field work.

CHEMISTRY.

Required.—1. Chemistry of the Non-Metals three times per week, together with Laboratory practice in the grouping and separating of Metals and Acids, two days each week and two hours each day, fall term.

Electives.—2. Qualitative Chemical Analysis, winter term, Laboratory practice two hours each day of the week.

3. Organic Chemistry, Laboratory work two hours per day, two days each week, spring term.

4. Mineralogy, descriptive and determinative; Laboratory work two hours per day, three days each week, spring term.

5. Sanitary Science, lectures three times each week. This Course will be given the fall term of 1887, but not in 1888.

6. Geology, Dynamical and Historical, four times each week.

7. Advanced work in the above courses will be given to students showing special proficiency.

Students expecting to teach will be given work to prepare them in chemical manipulations, the care and management of a Laboratory, etc.

BIOLOGY.

Required.—As preparatory to the College work, a term's work each in Human Physiology and Systematic Botany is taught.

In Freshman Year all students are required to take Zoology, four hours. Study from actual specimens is carried on as far as possible, spring term.

Electives.—1. Microscopy, the practical study of the use of the Microscope in Biological Research. Each student is furnished with a Compound Microscope and other appliances for the preparation and mounting of objects for study; winter term, two hours each day.

2. General Biology, in which underlying principles are discussed and low forms of life, both animal and vegetable, studied. Two hours of Laboratory Work each day, and three days per week; fall term.

3. Animal Biology, a continuation of Course 2. Laboratory Work two hours per day, three days per week; spring term.

4. Vegetable Biology also a continuation of Course 2, in which several type forms of vegetable life are studied. Laboratory practice two hours a day, three days; spring term.

5. Research Class, for the discussion of current Biological topics, reviews of periodical literature, etc., will meet once a week, and a class will be formed, during any term, when a sufficient number apply for it.

It is desirable that Course 1 should be taken before 2, 3 and 4, and Course 2 must precede 3 and 4.

In Courses 2, 3 and 4, students are required to (a) collect their material as far as practicable, (b) observe and study the object itself, (c) make careful notes on all points observed, (d) make drawings of separate structures and diagrams showing their relation to other structures, and (e) embody the knowledge thus obtained, and no other, in a written account.

Students who show special proficiency in Courses 2, 3 and 4 may continue the work as Collateral Research.

HISTORY, POLITICS AND ECONOMICS.

Students desiring to take any of the work here laid out must have been credited with at least five hours in U. S. History and ten hours in General History.

1. Modern Political History of Continental Europe. Lodge. Special attention given to the Rise and Decline of the Ottoman Empire, and to the Rise of Prussia and Russia. Three hours per week, 1st and 2nd terms.

2. Historical Geography, Ancient and Modern. Students will be required to make maps showing political condition of the world at different epochs. Two hours 1st term, three hours 2nd term.

3. History of Civilization. Guizot. Three hours 2nd and 3rd terms.

4. Constitutional History of the United States. Von Holst. Two hours 1st term, three hours 2nd term.

5. Constitutional History of England. Gneist. Considerable attention given to recent changes in the Constitution of the British Empire. Four hours 3rd term.

6. Political Economy. Mill. Topical Reports from Students. The Importance of Experience as the final test of theory constantly emphasized. Three hours 1st and 2nd terms.

7. International Law. Woolsey. Prominence given to contemporaneous questions. Four hours 3rd term.

8. Political Science. Woolsey. Reports by students on standard authorities on the subject. Two hours 1st term, three hours 3rd term.

9. A Research Class will be formed for work in Politics and Economics, during the first and second terms. These will be prepared, as far as possible, by the use of original authorities; reports will be given upon books and articles from the periodicals, suggestions made as to best methods of work, etc. In the third term the work will consist chiefly of studies from the periodicals on current topics. Credits from one to three hours, at the discretion of the Instructor in charge. Tuesday evenings from 7 to 9 o'clock.

NOTE.—Courses 1, 2, 7 and 8 will be given in 1888-9 and every second year thereafter. 3, 4, 5 and 6 will be given during 1887-8, and every second year thereafter.

Instead of any of the above, other courses may be given, if from any cause such change should seem desirable.

Only such students will be admitted to the Research Class as, in the judgment of the Instructor, are prepared to prosecute the work successfully.

ENGLISH.

The College has just instituted a comprehensive English Course, for admission into which four years of High School work will be required. The main feature of this Course is the introduction of a large amount of English work, embracing a very full study of the English Classics, the structure and literature of our English tongue, with an unusual amount of Historical Research. Special attention will also be given to the Anglo-Saxon, Transitional English, etc. It is proposed to make the Course very comprehensive to meet the wants of students who, graduating from the English Course of any of our High Schools, desire to pursue the same line of study to a much greater extent.

PHILOSOPHY.

Required.—I. Psychology—Cocker's Handbook of Philosophy will be used, accompanied by familiar lectures with ample elucidations. Analysis of Mental Phenomena and Faculties specially insisted upon—first half of the year.

II. Logic—Inductive and Deductive—The identity of fundamental principles explained, and the special office of each form of Logic given. For outlines of the subject, Jevons; for fuller study of special subject, Mill—half a year.

Electives.—III. History of Philosophy.—This must be preceded by Psychology in order that there may be a standard of Philosophy in the mind of the student with which to compare the theories advanced by the different Schools. A thorough analysis of each School will be presented, with the two-fold aim of learning the History of Philosophic Thought, and determining what is true in the different systems studied. The first half of the year—several works used.

IV. Moral Science.—The fundamental principles will first be considered, then their application to human life. This study follows Psychology, and is pursued in the latter half of the year. Four-fifths of a term—Calderwood and Porter.

V. Theism—Bowne used as a text book—taught during the Spring term.

 SECTION XXVIII.

**EXPLANATORY STATEMENTS ON THE COURSES
OF STUDY, PARTICULARLY OF THE
JUNIOR AND SENIOR YEARS.**

Some very important changes have been made in the curriculum of studies. The system of college work is made to conform to the most advanced views of leading teachers, and is brought into harmony with the natural and necessary order of mental growth—both individual development and race civilization. A few words of explanation only in this place.

By the time the student reaches the beginning of the Junior

year he is regarded as prepared for more independent work than he could generally carry forward in the earlier part of his course. Henceforth his individual preferences are more largely consulted. It will be seen that lines of study and investigation are provided from which he may select the branches to be pursued. We invite attention to the following points:

1. A few studies are elective previous to the Junior year.
2. All studies in the Junior and Senior years are elective with the exception of Psychology, Logic and one term of Chemistry.
3. Students must select from at least *two* lines.
4. It is recommended that they select from *three* lines—they must not select from more than *five* lines. These selections will be made under the advice of the Faculty, so that consistency of work may be secured.

5. The student will be required to have fifteen hours of recitation each week, or what is equivalent thereto.

6. A large amount of *research* work will be prosecuted during the Junior and Senior years.

7. *The Degree conferred at graduation will be determined by the course pursued up to the close of the Sophomore year.* If, previous to that time the student has taken the studies of the classical course, his degree will be "Bachelor of Arts;" if Latin Scientific, it will be "Bachelor of Philosophy;" if Scientific, it will be "Bachelor of Science;" if English, it will be "Bachelor of Letters." The Junior and Senior studies will be largely of a university character, preparing the student for independent investigation when, from graduation, he must carry forward his studies without the presence and guidance of a living teacher. The lines of study provided have been made so broad and varied that the candidate for any of the professions, as well as the business man, can obtain here the scholarship which will best fit him for his chosen and anticipated mode of life.

We recommend an examination of the entire curriculum from the beginning of the preparatory to the end of college work.

SECTION XXIX.

SCHEDULE OF RECITATIONS FOR THE YEARS
1887-8.

	FIRST TERM.										SECOND TERM.										THIRD TERM.									
	Pres.	Welch.	Dickie.	Fall.	Taylor.	Barr.	Avann.	Lutz.	Clark.	Tutor.	Pres.	Welch.	Dickie.	Fall.	Taylor.	Barr.	Avann.	Lutz.	Clark.	Tutor.	Pres.	Welch.	Dickie.	Fall.	Taylor.	Barr.	Avann.	Lutz.	Clark.	Tutor.
8		4	1		5			2				4	1			2		3					4	1	5	6	2		4	
9.20			5	6		4	6		2	1	7-8	6		4	6		3	5	2	1			6	3	5		6	5	2	1
10.20	7-8	6			6	2	4	4	5			5				6	4	4	1		7-8				2		4	4	5	1
11.20		5		3	6	5				1			5	3		5				1		5				5	3		3	1
1.30			3									3				5			5						3			5		
2.30				7		6	3	5	3	1		5	6		6				5	2						4	6		6	
3.30				7	4		5		6	3		6				6	2					6		4						

Each figure in the above squares represents the number of the year, beginning with the first Preparatory, as 1, second year as 2, etc. Where the same figure occurs twice the same hour the studies are in different courses and do not conflict. The elective studies are not included in the schedule.

SECTION XXX.

FOUR YEARS' MUSICAL COURSE.

FIRST YEAR.

GRADE I.—First part of Instruction Book—(New England Conservatory, or Mason and Hoadley), studies by Gurlitt, Loeschhorn, Biehl.

GRADE II.—Kohel Op. 50. Duvernoy Op. 120. Loeschhorn Op. 65. Eschman Studies.

SECOND YEAR.

GRADE III.—Bertini Op. 26-32. Czerny Op. 636. Loeschhorn Op. 66.—Books 1 and 2 Heller Op. 47.

GRADE IV.—Czerny Op. 299. Loeschhorn Op. 66.—Book 3. Heller Op. 16.—1st Book. Berens Op. 61. Krause Op. 5. Kohler Op. 128—1st Book.

THIRD YEAR.

GRADE V.—Czerny Op. 409 and 740. Loeschhorn Op. 67—1st Book. Heller Op. 16—2nd Book. Kohler Op. 128—2nd Book.

Harmony, through the year.

GRADE VI.—Loeschhorn Op. 67—2nd and 3rd Books. Loeschhorn Op. 118. Cramer's Studies. Bulow's Ed—1st Book.

FOURTH YEAR.

GRADE VII.—Cramer's Studies.

Chopin Op. 10.

Moscheles Op. 70.

Haberbier Studies, Poesies.

Clementi—*gradus et parnassum*.

Harmony, through the year.

Text Books in Harmony—Parker's Theory, Richter's Manual of Harmony, and Richter's Counterpoint.

Musical Form by Cornell.

SECTION XXXI.

SIX YEARS' MUSICAL AND LITERARY COURSE.

FIRST YEAR.

First part of Instruction Book, (New England Conservatory Method, or Mason & Hoadley's Instruction Book.)

Studies by Gurlitt, Biehl, Loeschhorn, Duvernoy.

Rhetoric, Civil Government, U. S. History, European History, American Literature, Elementary Physics—25 hours.

SECOND YEAR.

Studies by Bertini, Czerny, Loeschhorn, Krause, Eschman.

French the whole year, English Literature, History of the Reformation, Physiology—25 hours.

THIRD YEAR.

Studies by Czerny, Heller, Bertini, Loeschhorn.

German the whole year, History Roman Empire, Grecian History, Acoustics—25 hours.

FOURTH YEAR.

Studies by Heller, Loeschhorn, Cramer.

Advanced Rhetoric, Elocution or English History, Italian through the year, Harmony through the year—20 hours.

FIFTH YEAR.

Studies by Moscheles, Haberbier and Clementi.

Harmony and Counterpoint through the year, Musical History, Italian Literature, French Literature, Middle Ages, German Literature, Musical Theory—20 hours.

Text Books of Harmony—Parker's Theory, Richter's Manual of Harmony, and Richter's Counterpoint.

Musical Form by Cornell.

SIXTH YEAR.

Studies in the works of Liszt, Chopin, Bach, Handel etc.

Harmony and Counterpoint, Musical Form and Analysis.

Terminology.

Text Books—Richter, Weitzman, Cherubini Bussler-Cornell, Matthews, Fillmore.

Psychology, Logic, Moral Science.

SECTION XXXII.

FOUR YEARS' MUSICAL COURSE WITH THE VIOLIN.

FIRST YEAR.

Dancla, Instruction Book, Vol. 1. Dancla, Op. 23, 32 and 60. I. Pleyel, Op. 8. Mazas, Op. 60, 61 and 38. Cah. 1.

SECOND YEAR.

Kayser, Op. 20, Nos. 1-11. Dancla, Op. 24, 33 and 61. F. Maza, Op. 62, 70 and 38. Cah. 2. I. Pleyel, Op. 48. Louis Schurbert, 2nd, 1st Suite. "Joseph Hayden."

THIRD YEAR.

Kayser, Op. 20, No. 111. Dancla, Op. 15, 34 and 62. F. Maza, Op. 71, 72, 39 and 36, Suite 1. Louis Schurbert, 2nd, 3d and 5th Suite.

FOURTH YEAR.

Maza, Op. 40, 41 and 36, Suite 11. J. Hayden, Op. 102, Cah. 1 and 11. J. B. Vroth; Op. 23, 6 Serenades.

SECTION XXXIII.

SCHOOL OF PAINTING.**SIX YEARS' PAINTING AND LITERARY COURSE.**

[On completion of this Course the degree of Bachelor of Painting is given. The painting without literary studies can in most cases be completed in five years.]

FIRST YEAR.

Drawing from flat and simple objects with charcoal and pencil. Drawing outline of cast. Shading from flat and simple objects in charcoal. Rhetoric, American Literature, Civil Government, Elementary Physics, U. S. History—25 hours.

SECOND YEAR.

Drawing from objects or casts. Shading in charcoal, crayon and India Ink. Sketching from nature in charcoal. Painting from flat and still life. Anatomy and Physiology, English Literature, History of the Reformation, French through the year—25 hours.

THIRD YEAR.

Shading from cast in crayon. Shading from cast in monochrome. Sketching from nature. Painting from still life and from nature in monochrome and color. Grecian History, Roman Empire, German through the year, Microscopy—25 hours.

FOURTH YEAR.

Outlining of human figure. Mixing of colors. Simple grouping and designing. Painting from nature. Art History, Art Literature, Art Biographies, French and German—20 hours.

FIFTH YEAR.

Drawing and shading from human form. Drawing from human form and shading in monochrome. Painting from nature. Broadhand Painting. Painting from human figure and from nature. Italian through the year, Art Criticism, French Grammar and Italian Literature—20 hours.

SIXTH YEAR.

Painting from nature. Painting from life. Composition and design. Methods adopted by the old masters, methods adopted by modern painters etc. Psychology, Logic, Moral Science.

We desire all students to take up literary studies in connection with painting. No person can devote more than three or four hours a day exclusively to painting, and general scholarship should be sought by all.

SECTION XXXIV.

RECORD OF THE PAST YEAR.

At the Commencement in June, 1886, the degree of B. A. was conferred on Elmer F. Abernethy, John A. Brady, John C. Chase, George W. Healy, G. William Loomis, Edgar L. Moon, Henry E. Wolfe.

The degree of B. Ph. on Ben Bennett, Ella A. Kingsley, J. Lizzie Rhines, Emma L. Southworth, William C. Van Loo.

The degree of B. S. on Charles H. Gordon, Carmi R. Smith, Durand W. Springer, L. Wesley Underwood.

The degree of M. A. on Paul Desjardins.

Diplomas of graduation from the four years' course of study in the Conservatory of Music were granted to Maud A. Bartley, May Fanning, Leonora A. Hart, Hattie M. Lazelle, Edith E. Landon, Crissie Ott, Effie R. Prouty, Clara C. Scofield, May Spaulding, Ella A. Snook, Frances A. Stafford, Luella F. Willard, Jennie A. Worthington.

During the Commencement Week the college celebrated its quarter-centennial with interesting exercises, which were participated in by the Governor of the State, Russell A. Alger, LL. D.

The attendance of students during the year 1885-6 was 365. The attendance of students the present year is 412, an increase of about 13 per cent. The value of the increase will be seen by observing that the Freshman Class is nearly twice as large as the one preceding it. More students also have come from the High Schools to enter the more advanced Preparatory classes than at any former period. A considerably large number of graded schools have applied for recognition, and arrangements have been made for admitting students from the same on their diplomas or certificates. We have found that we can rely on our best High Schools to do the preparatory work for college in a satisfactory manner.

We have been for several years strengthening our courses of study, with the purpose of making them superior to the courses in most colleges, and inferior to none. We have also provided a new course, the English, which prepares for the degree of Bachelor of Letters. We find that this accommodates the

students coming from many of the High Schools in which no instruction is given in the ancient languages.

Experience has convinced us that our research work is productive of much good. The student learns how to use books; he gets much more benefit from the library than he otherwise would; he becomes a more intelligent and independent thinker; he gets accustomed to original and exhaustive research; the chasm between ordinary college life and post-graduate methods is bridged, and he is able, on graduation, to enter directly and successfully on higher literary or public work. The College, while not claiming as yet to be a university, is doing a considerable amount of university teaching, and many students are prosecuting their studies by university methods.

We have given a fair trial to the elective system and are convinced that the freedom of choice of studies does not tend to superficiality or the selection of branches requiring the smaller amount of work. We do not allow the elections to be made at random, but along consistent lines; and while predilection, as is reasonable to suppose, has much to do with the choice made, the profession or occupation toward which the student is looking is obviously one of the principal grounds of selection. A decided advantage is gained from the larger interest the student thus feels in his work.

Many valuable books have been put in the library, amounting in all to 421 volumes. The library now contains 5,621 volumes, aside from extensive files of leading papers of this and other lands.

The museum has been enriched by the addition of some rare specimens in natural history and from the mineral world. There are several earnest collectors who are rendering us much service, among whom we may properly mention Mr. Brigham, in South America, and L. J. Knapp, in Montana.

Considerable valuable apparatus has been put in the Physical Laboratory, and some microscopes added to the appliances of the Biological Laboratory.

The language department has been adding extensive sets of language charts, these charts being prepared at the Institution. Under the direction of the Professor of History the College is

preparing maps on a new plan covering every material change in historical boundaries and national life. No institution of learning in this country or the old world possesses anything to compare with it. Already we have built up quite a museum of geographico-historical maps, and are rapidly adding to the number. As the principle has been patented they cannot be manufactured elsewhere without permission.

During the year the work of endowing another Professorship has been in progress, which it is hoped will meet with complete success.

The Conservatory of Music has become very prominent. It has rapidly gained in patronage and influence because of the thoroughness and breadth of its work. Instruction is given on nearly every valuable musical instrument. Voice culture is made a specialty. It supports an orchestra of about 50 pieces. It provides two courses of study, one covering four years of time, the other six years, much attention being given to Harmony and Counterpoint.

The Department of Painting has had a very encouraging growth during the year. A beautiful Art Gallery has been fitted up, which contains an exceedingly fine display of sketches and paintings. The number of students has increased and the work done has shown much painstaking and skill. The public are invited to visit the Art rooms.

At the opening of the year a Business Department was inaugurated with the purpose of providing for students in the college instruction in commercial branches so that they would be better fitted on leaving college to engage in business pursuits. A room has been fitted up with offices and all the equipments of a complete commercial school. No announcement was made in regard to this department until the year was about to open. The department has had quite a number of special students, and many students in the regular courses have given considerable attention to the studies herein taught. Our purpose is to make the work exceedingly thorough. The outlook is very gratifying.

As to the plans and general work of the Institution, we have received five-fold more of letters of inquiry, and applications for catalogues from other states than during any previous year. We shall be glad to furnish information whenever asked.

PART IV.

CATALOGUE OF ALBION COLLEGE.

CORPORATION.

TRUSTEES.

L. R. FISKE, LL. D., *Ex-Officio*, President, Albion.

ELECTED BY THE DETROIT CONFERENCE.

<i>Name.</i>	<i>Residence.</i>	<i>Term Expires.</i>
Rev. H. C. Northrup, A. M. B. D.,	Lapeer.....	1887
John M. Hall, A. M.....	Flint.....	1887
David Preston*.....	Detroit.....	1888
Otis A. Critchett, A. M.....	Monroe.....	1888
Rev. J. S. Smart, D. D., Vice-Pres.	Albion.....	1889
Horace Hitchcock.....	Detroit.....	1889

ELECTED BY THE MICHIGAN CONFERENCE.

Levi Master, A. M.....	Ionia.....	1887
James W. Sheldon, Treas.....	Albion.....	1887
Hon. H. E. Staples.....	Whitehall.....	1888
Rev. W. H. Brockway.....	Albion.....	1888
Amos M. Gould.....	Kalamazoo.....	1889

ELECTED BY THE SOCIETY OF ALUMNI.

David Knox, A. M.....	Three Rivers.....	1877
Rev. J. W. Hallenbeck, A. M.....	Portland.....	1888
Reuben E. Clark, A. M.....	Chicago.....	1889

ENDOWMENT FUND COMMITTEE.

Wm. H. Haze, M. D.....	Lansing.....	1889
Hon. Daniel Striker.....	Hastings.....	1892
S. P. Sidnam.....	Hastings.....	1895

ALBION PROVISIONAL BOARD OF CONTROL.

Rev. A. M. Fitch,* Chairman.	James Anderson.
James W. Sheldon, Secretary	Orlando C. Gale.
and Treasurer.	Martin Haven.
Rev. W. H. Brockway.	

SECRETARY OF BOARD OF TRUSTEES.

Samuel Dickie, M. S.....	Albion
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*Deceased.

BOARD OF VISITORS AND EXAMINERS.

APPOINTED BY SUPERINTENDENT OF PUBLIC INSTRUCTION.

Supt. David Howell.....Lansing
 Prof. J. C. Spencer.....Battle Creek
 Hon. Albert Miller.....Bay City

APPOINTED BY DETROIT CONFERENCE.

Rev. J. S. Joslin.....Howell
 Rev. Franklin Bradley.....South Lyon
 Rev. E. W. Ryan.....Bay City

APPOINTED BY MICHIGAN CONFERENCE.

Rev. M. M. Callen.....Lansing
 Rev. J. W. H. Carlisle.....Grand Rapids
 Rev. N. M. Steel.....Hart

STANDING COMMITTEES FOR 1886-7.

EXECUTIVE COMMITTEE.

L. R. Fiske. J. S. Smart. J. W. Sheldon. W. H. Brockway.

AUDITING COMMITTEE.

L. R. Fiske. J. S. Smart. J. W. Sheldon. W. H. Brockway.

FINANCE COMMITTEE.

David Preston.* Horace Hitchcock. O. A. Critchett.

COMMITTEE ON FACULTY.

Otis A. Critchett. J. W. Hallenbeck. Levi Master.

COMMITTEE ON RULES AND REGULATIONS.

L. R. Fiske. A. M. Gould. H. E. Staples. John M. Hall.

COMMITTEE ON COURSES OF STUDY.

L. R. Fiske. J. W. Hallenbeck. David Knox. H. C. Northrup.

COMMITTEE ON LIBRARY AND APPARATUS.

Reuben E. Clark. H. C. Northrup. F. M. Taylor.

COMMITTEE ON BUILDINGS AND GROUNDS.

L. R. Fiske. J. S. Smart. J. W. Sheldon.

ASBURY CENTENARY ASSOCIATION.

OFFICERS.

President—Bishop Wm. X. Ninde, D. D., LL. D., Topeka, Ks.
 Vice-Presidents—

Pres. L. R. Fiske, D. D. LL. D.....Albion, Mich

Gen. Clinton B. Fisk.....New York

Hon. Thomas W. Palmer, A. M.....Detroit, Mich

Julius Berkey, Esq.....Grand Rapids, Mich

Secretary—Prof. Samuel Dickie, M. S.....Albion, Mich

Corresponding Secretary—Rev. J. S. Smart, D. D., Albion, Mich

Treasurer—James W. Sheldon, Esq.....Albion, Mich

BOARD OF MANAGERS.

The Bishops of the Methodist Episcopal Church, and the Trustees of Albion College, are *ex officio*, members of the Board of Managers.

MANAGERS ELECTED BY MICHIGAN CONFERENCE.

<i>Name.</i>	<i>Residence.</i>	<i>Term Expires.</i>
Rev. T. H. Jacokes	Lyons, Mich.....	1887
Rev. W. J. Aldrich.....	Muskegon, Mich.....	1887
Rev. Washington Gardner.....	Jackson, Mich.....	1887
L. H. Jennings, Esq.....	Ionia, Mich.....	1887
J. W. Moon, Esq.....	Muskegon, Mich.....	1887
D. W. Peabody, Esq.....	Hanover, Mich.....	1887
Rev. J. A. Sprague.....	Grand Rapids, Mich..	1888
Rev. Levi Master, A. M.....	Ionia, Mich.....	1888
M. J. Bigelow, Esq.....	Kalamazoo, Mich.....	1888
W. P. Sidnam, Esq.....	Hastings, Mich.....	1888
Rev. D. F. Barnes.....	Kalamazoo.....	1889
Rev. J. K. Stark.....	Reed City.....	1889
Wm. Van Loo, Esq.....	Big Rap'ds.....	1889
M. R. Bissell.....	Grand Rapids.....	1889

MANAGERS ELECTED BY DETROIT CONFERENCE.

Rev. Arthur Edwards, D. D.....	Chicago, Ill.....	1887
Rev. John McEldowney, D. D.....	Detroit, Mich.....	1887
Rev. W. W. Washburn, D. D.....	Monroe, Mich..	1887
Hon. John Owen.....	Detroit, Mich.....	1887
Hon. H. M. Loud.....	Oscoda, Mich.....	1887
T. C. Owen, Esq.....	Detroit, Mich.....	1887
Rev. J. E. Jacklin.....	Bay City, Mich.....	1888
Rev. I. N. Elwood, A. M.*.....	Flint, Mich.....	1888
Albert Miller, Esq.....	Bay City, Mich.....	1888
Marshall H. Godfrey, Esq.....	Detroit.....	1888
Rev. L. P. Davis, A. M.....	West Bay City, Mich.	1889
Rev. C. T. Allen.....	Pontiac, Mich.....	1889
Hon. J. R. Whiting.....	St. Clair, Mich.....	1889
F. R. Beal, Esq.....	Northville, Mich.....	1889

*Deceased.

BOARD OF INSTRUCTION.

LEWIS R. FISKE, PRESIDENT.

CARL. B. SCHEFFLER, DIRECTOR OF CONSERVATORY.

ROLLIN C. WELCH, SECRETARY.

REV. L. R. FISKE, D. D., LL. D.,
John Owen Professorship of Intellectual and Moral Philosophy.

REV. ROLLIN C. WELCH, A. M.
Greek and Hebrew Languages and Literature.

REV. SAMUEL DICKIE, M. S.,
Ezra Bostwick Professorship of Astronomy.

DELOS FALL, M. S.,
David Preston Professorship of Biology and Chemistry.

Samuel O. Knapp Professorship of Geology and Mineralogy.

FRED M. TAYLOR, A. M.,
History and Belles Lettres.

CARL B. SCHEFFLER,
Piano, Harmony and Counterpoint.

SAMUEL D. BARR, A. M.,
Mathematics.

ROBERT S. AVANN, Ph. D.,
Latin Language and Literature.

FREDERICK LUTZ, A. M.,
Modern Languages.

STEWART F. GANUNG,
Piano and Organ.

ELLA M. SMITH,
Voice Culture and Guitar.

E. JOSEPHINE CLARK, A. M.,
English Language and Literature.

MATTIE C. ELWOOD,
Drawing and Painting.

HATTIE A. REYNOLDS,
Violin,

JENNIE A. WORTHINGTON,
Piano.

MARY E. JOHNS,
Voice Culture.

M. L. MINER,
Commercial Department.

R. A. MARTIN, M. D.,
Instructor in History.

E. C. GLENN,
Assistant in Commercial Department.

FRED M. TAYLOR, A. M.
Librarian.

REV. B. S. TAYLOR, M. D.
Assistant Librarian.

STUDENTS IN THE COLLEGE.

SENIORS.

To Think is to Live.

NAME.	COURSE.	RESIDENCE.
Sella E. Arnold,.....	CL.....	Albion.
Arthur E. Bibbins,.....	LAT. SC.....	Hanover.
Hugh A. Graham,.....	CL.....	Calkinsville.
Spencer L. Houghton,.....	CL.....	Redford.
G. Fred Knappen,.....	LAT. SC.....	Albion.
Nellie M. Knappen,.....	LAT. SC.....	Albion.
Frank H. Loomis,.....	CL.....	Edwardsburg.
Thos. J. Martin,.....	LAT. SC.....	Albion.
Cora E. Mather,.....	LAT. SC.....	Albion.
Rose L. Oldman,.....	LAT. SC.....	Leslie.
Florence M. Perrine,.....	CL.....	Meabry, Dak.
Minnie E. Smart,.....	CL.....	Albion.
William M. Snell,.....	LAT. SC.....	Bay Port.
Annie E. Stevens,.....	CL.....	Albion.
Dwight B. Waldo,.....	LAT SC.....	Albion.
William C. Webster,.....	CL.....	Battle Creek.

CL.—Classical. SC.—Scientific. LAT. SC.—Latin Scientific. ENG.—English.

JUNIORS.

Nunquam Non Paratus.

NAME.	COURSE.	RESIDENCE.
H. Victor Allen,.....	LAT. SC.....	Albion.
Joseph C. Cook,.....	CL.....	Flat Rock.
Wm. T. Cook,.....	CL.....	Rolfe, Iowa.
Anson E. Hagle,.....	SC.....	Albion.
Jennie M. Houghtaling....	LAT. SC.....	Albion.
Shelly B. Jones,.....	LAT. SC.....	Greenville.
Charles M. Kimball,.....	SC.....	Martin.
Elbert O. Mather,.....	CL.....	Albion.
Joseph P. McCarthy,.....	CL.....	Onreida, N. Y.
Mary C. Norris,.....	CL.....	Tekonsha.
Herman C. Scripps,.....	CL.....	Detroit.
Loren W. Tharrett,.....	SC.....	Warren.

SOPHOMORES.

Ad Astra Per Aspera.

NAME.	COURSE.	RESIDENCE.
Alice H. Barnhart,.....	CL.....	Albion.
M. Maud Beard,.....	CL.....	Albion.
Stella M. Coney,.....	SC.....	Albion.
John F. Critchett,.....	LAT. SC.....	Monroe.
Myrtie E. Graves,.....	LAT. SC.....	Albion.
Sarah P. Hopkins,.....	LAT. SC.....	Ypsilanti.
Olive B. Hull,.....	SC.....	Albion.
Luther E. Lovejoy,.....	CL.....	Albion.
Sheridan F. Master,.....	CL.....	Ionia.
May A. Osborne,.....	CL.....	Albion.
Ira D. Travis,†.....	LAT. SC.....	Alma.
Harry M. Weed,.....	LAT. SC.....	Colon.
Will S. White,.....	LAT. SC.....	Flint.

†In advance of the Class.

FRESHMEN.

Ad Summum.

NAME.	COURSE.	RESIDENCE.
Henry B. Arnold,.....	CL	Marshall.
Rena S. Barber,.....	LAT SC.....	Quincy.
J. Edmund Barrell,.....	CL	Middleville.
Thomas M. Bell,.....	SC	Sharpton, Ont.
Maud Bristol,†.....	LAT SC.....	Albion.
Nathan P. Brown,.....	CL	Howell.
Ruth E. Coney,.....	LAT SC.....	Albion.
Arthur W. Connable,.....	SC	Petoskey.
Thomas Cox,.....	CL	Concord.
Palmer M. Dearing,.....	LAT SC.....	Albion.
James H. Delbridge,.....	SC	Albion.
Grace E. Dewey,.....	CL	Concord.
Hattie M. Doolittle,.....	LAT SC.....	Albion.
Elliot R. Downing,.....	SC	Ishpeming.
Edward A. Edmonds,.....	LAT SC.....	Tekonsha.
Orrin D. Ellett,.....	CL	Layton's, N.J.
Clarence A. Fiske.....	CL	Albion.
Homer Folks,†.....	CL	Hanover.
Etta Goss,.....	LAT SC.....	Otsego.
Blanch C. Gould,.....	CL	Belvidere, Ill.
Edith Haslett,.....	SC	Charlotte.
John C. Hurspool,.....	LAT SC.....	Otsego.
Arthur R. Kellogg,.....	CL	North Adams.
E. Watson Laing,.....	CL	Ortonville.
Jane M. Laing,.....	LAT SC.....	Ortonville.
Mary R. Laing,.....	LAT SC.....	Ortonville.
Frank J. Morrell,.....	CL	Sherman.
May E. Moses,.....	SC	Seneca Falls, N. Y.
Mena Mudge,.....	SC	Hastings.
Mina Mudge,.....	SC	Hastings.
Fred B. Mumford,.....	SC	Hanover.
Efferd R. Nethercott,†.....	LAT SC.....	Marlette.
Harvey Ott,.....	LAT SC.....	Albion.
Anna G. Pealer,.....	CL	Three Rivers.
Eugene C. Pierce,.....	CL	Clinton.
Fisk M. Ray,.....	LAT SC.....	Concord.
May B. I. Smith,.....	CL	Detroit.
Arthur K. Stewart,.....	CL	Wallaceburg, Ont.
Enton B. Sutton,.....	SC	Cheboygan.
Zua W. Thomas,.....	CL	Albion.
Kingsley Van Loo,.....	LAT SC.....	Big Rapids.
Ira T. Welden,.....	SC	Mosherville.

†In advance of the Class.

Students in the Preparatory School.

FOURTH YEAR.

NAME.	COURSE.	RESIDENCE.
Lewis F. Abbott,.....	LAT. SC.....	Galesburg.
Andrews Allison,.....	SC	Sheridan.
Amanda Barnhart,.....	CL.....	Albion.
James H. Bartley,.....	SC.....	Albion.
Jacob C. Bergmans,.....	CL.....	Leeland.
George R. Berkaw,.....	LAT SC.....	Albion.
Samuel K. Boyd,.....	LAT SC.....	Albion.
Carrie M. Bruce,.....	CL	Albion.
Clara A. Bullen,.....	SC	Parma.
Smith Burnham,.....	LAT SC.....	Climax.
Ella S. Butterfield,.....	SC	Parma.
Frank Casper,.....	LAT SC.....	Parkville.
Walter M. Connable,.....	SC	Petoskey.
Carl E. Copp,.....	SC	Plainwell.
Ernest A. Davis,.....	SC	Albion.
Fred Finch,.....	SC	Parma.
Stella M. Heath,.....	LAT SC.....	Dowling.
Fred C. Kimball,.....	CL	Albion.
Frank La'erteaux,.....	SC	Albion.
Otis A. Leonard,.....	LAT SC.....	Albion.
Owen R. Lovejoy,.....	CL	Albion.
M. Ellen Maxwell,.....	CL	Mt. Pleasant.
Belle Miller,.....	SC	Litchfield.
Newell J. Morehouse,.....	ENG	Albion.
Irvin E. Robinson,.....	LAT SC.....	Lansing.
Walter S. Root,.....	SC	Mason.
Edith Smith,.....	SC	Albion.
Charles B. Warren,.....	LAT SC.....	Albion.
Emma E. Wells,.....	CL	Petoskey.
George W. Wright,.....	CL	Albion.

THIRD YEAR.

NAME.	COURSE.	RESIDENCE.
John F. Arnoldt,.....	CL	Albion.
Frank W. Bross,.....	CL	North Adams.
Anna L. Dickey,.....	ENG	Jackson.

Ira H. Dysinger,	CL	Portland.
Seymour C. Eslow,	LAT SC	Homer.
Stanley C. Griffin,	SC	Albion.
Anna E. Hull,	LAT SC	Albion.
Sidney Hull,	SC	Albion.
Arthur L. Landon,	LAT SC	Albion.
Ema Lewis,	SC	Chelsea.
Matie E. Lownsbery,	ENG	Albion.
Mary E. Lyons,	LAT SC	Corunna.
Roland L. Parmeter,	SC	Albion.
Charles A. Phelps,	ENG	Whitehall.
Marian Pierce,	ENG	Ceresco.
Francis A. Scott,	LAT SC	Bowne City.
William H. Simmons,	LAT SC	Marshall.
Jennie A. Seeley,	LAT SC	Evart.
Thomas C. Snell,	SC	Bay Port.
John Steinkraus,	SC	Sheridan.
John E. Strong,	SC	Vicksburg.
Lewis P. Strong,	SC	Vicksburg.
David K. Titman,	SC	South Albion.
Allen J. Wilder,	LAT SC	Tekonsha.
Charles S. Winans,	LAT SC	Chelsea.
Lizzie M. Wright,	LAT SC	Albion.

SECOND YEAR.

NAME.	COURSE.	RESIDENCE.
William E. Aikin,	SC	Sheridan.
John L. Austin,	LAT SC	Detroit.
Arthur R. Babcock,	CL	Albion.
Rosa Ball,	SC	Albion.
John H. Bass,	CL	Banfield.
Harlon G. Clark,	SC	East Saginaw.
Byron G. Doolittle,	SC	Tekonsha.
Harvey A. Doolittle,	SC	Tekonsha.
Alice Encke,	ENG	Albion.
John W. Fair,	LAT SC	Norway.
Seldon B. Ford,	SC	Macedon, N. Y.
Charles A. Goodale,	LAT SC	Chesaning.
Harold I. Graves,	LAT SC	Albion.
James C. Graves,	ENG	Sheridan.
G. Robert Herkimer,	SC	Niles.
R. Will Holmes,	SC	Caseville.
Minnie I. Horton,	SC	Albion.

NAME	COURSE	RESIDENCE
John W. Huckle,.....	SC	Omert.
Lulu D. Keller,.....	SC	Albion.
Neil M. Kerr,.....	CL	Petrolia, Ont.
Rilla M. Kinney,.....	SC	Hemlock Lake, N. Y.
Carrie Leeman,.....	LAT SC	Chelsea.
Hattie A. Lovejoy,.....	ENG	Albion.
Charles H. Manzer,.....	CL	Harrisville.
Carrie Mershon,.....	ENG	Hastings.
Maggie L. Miller,.....	ENG	Albion.
George Glenn Newell,.....	SC	Grand Rapids.
Nettie Norris,.....	LAT SC	Tekonsha.
Cora A. Parsons,.....	SC	Albion.
La Verne Peterson,.....	CL	Albion.
Theodore C. Prouty,.....	SC	Marengo.
S. May Saxton,.....	ENG	Springport.
Claude Smith,.....	SC	Orland.
Hattie B. Smith,.....	LAT SC	Springport.
Lillian M. Stryker,.....	ENG	Albion.
Hartley W. Taylor,.....	LAT SC	Albion.
Eva E. White,.....	ENG	Albion.
Leland M. White,.....	LAT SC	Albion.
Lizzie M. Wilder,.....	CL	Armada.
Fred N. Wright,.....	SC	Albion.

FIRST YEAR.

Lida H. Austin,....	Monica.
Carrie M. Brewer,....	Cleveland, Ohio.
Hattie C. Bunce,....	Marysville.
George A. Campbell,....	Parma.
Eugene T. Carpenter,....	Williamsburg.
Lucinda Dickey,....	Jackson.
E. Clarence Dunning,....	Albion.
Walter I. Elmer,....	Harrisville.
Claude Goodrich,....	Albion.
Sabra E. P. Herron,....	Albion.
Frank U. Jones,....	Vandalia.
Evelyn A. Joslin,....	Howell.
Irving L. Kellogg,....	Battle Creek.
Edith B. Latham,....	Baltimore.
Lucy J. Lawrason,....	Fowler.
James L. Lee,....	Hastings.
Lena Lownsbery,....	Albion.
Henry H. Merriman,....	Lowell.
Julia B. Mills,....	Petoskey.
Blanche L. Percy,....	Brooklyn, N. Y.
Hattie C. Powers,....	Springport.
Lowell Reasoner,....	West LeRoy.
Hattie M. Rood,....	Rockford, Ill.
Ella Schall,....	Graceville, D. T.
Lucile B. Scott,....	Dewitt.
John Sheehan,....	Somerset, N. Y.
Allice L. Smith,....	Marshall.
Flora A. Smith,....	Meridian.
Clara Southwell,....	Marengo.

William H. Spence	...	...	...	Detroit.
Mame R. Taylor,	....	....	....	Dewitt.
Lola L. Todd,	....	....	....	Albion.
Orlie B. Van Horn,	....	....	....	Dowling.
Ella Roberta Weber,	....	....	....	Brooklyn, Ohio.

Unclassified Students.

Adam Clark,	...	...	LAT SC...	Charlevoix.
James W. McAllister,	....	....	CL	Antioch, Ontario.
Emma Parsons,	....	....	SC	Hanover.
J. E. Ryerson,	....	....	SC	Ontario.
Delbert L. Thomas,	....	....	LAT SC...	Albion.

ACADEMIC STUDENTS.

Roy F. Andrews,	....	....	....	Albion.
Frank L. Armstrong,	....	....	....	Albion.
Frank V. Arnold,	....	....	....	Marshall.
Clifton J. Atherly,	....	....	....	South Haven.
Thomas R. Berwick,	....	....	....	Albion.
Carrie I. Billinghamurst,	....	....	....	Rice Creek.
Minnie J. Boudeman,	....	....	....	Three Rivers.
Nellie M. Brewer,	....	....	....	Cleveland, Ohio.
Alice H. Brockway,	....	....	....	Johnsville.
Herbert M. Brown,	....	....	....	Albion.
Wilbur S. Burns,	....	....	....	Albion.
Edward S. Carr,	....	....	....	Homer.
Isabel Case,	....	....	....	Albion.
Fannie Catton,	....	....	....	Constantine.
John F. Chambers,	....	....	....	Cheboygan.
Jennie B. Chapman,	....	....	....	Fowlerville.
Thomas W. Clemon,	....	....	....	Port Austin.
Charles E. Connor,	....	....	....	Albion.
Ezra A. Cross,	....	....	....	Caro.
Charles L. Curtis,	....	....	....	Albion.
Clarence E. Deal,	....	....	....	Kalamazoo.
Holden DuBois,	....	....	....	Unadilla.
Norman J. Elsey,	....	....	....	Banfield.
Casper J. Fow,	....	....	....	Banfield.
Nora A. Heath,	....	....	....	Albion.
Arthur J. Herron,	....	....	....	Detroit.
Bertha D. Herron,	....	....	....	Detroit.
Rhody M. D. Herron,	....	....	....	Detroit.
Anna Higgins,	....	....	....	Springport.
Edward S. Houghtaling,	....	....	....	Albion.
Edward S. Howland,	....	....	....	Kendall.
Inez V. Hoyt,	....	....	....	Marshall.
Otto Inamoto,	....	....	....	Hokadota, Jap'n.
Alfred W. Jilbert,	....	....	....	Allouez.
Hattie M. Johnson,	....	....	....	Manistee.
Anna Johnson,	....	....	....	Pritchardville.
Luther B. Kenyon,	....	....	....	Lyons.
Ernest M. Marsh,	....	....	....	Albion.
Kate M. Marsh,	....	....	....	Albion.

Eva L. Marzolf,	Colon.
Yuba C. Maynard,	Eckford.
Carl W. Morehouse,	Albion.
Ralph Newman,	Jackson.
Charles J. Obert,	Bancroft.
Bertha Parce,	Albion.
Clark F. Parmelee,	Albion.
William H. Pierce,	Newton.
Birdie E. Power,	Wixom.
Philip J. Ralph,	Lake Linden.
Lewis Reed,	Albion.
Charles E. Reynolds,	Horton.
Anna A. Rowell,	Morrice.
Nellie G. Rowell,	Morrice.
Lant Saulsbury,	Bowne Centre.
Samuel M. Spear,	Cornwall, Eng.
Fred P. Sprague,	Vermontville.
Alfred A. Stephens,	Albion.
Marshall Strayley,	Greenville.
Herbert W. Thompson,	Grand Rapids.
Morris B. Townsend,	Ionia.
Harry O. Turner,	Detroit.
Addie Van Gieson,	Olivet.
Sabra D. Warner,	Kendall.
Fred A. Wickens,	Clyde.
Elma I. Wines,	Albion.

Students in Conservatory of Music.

POST GRADUATES.

NAME.	RESIDENCE.
Maud A. Bartley,	Albion.
Emma Crittenden,	Albion.
Hattie F. Reynolds,	Horton.
May Spaulding,	Albion.
Ella A. Snook,	Jackson.
Nora Taylor,	Parma.
Franc A. Stafford,	Port Hope.

GRADE VII.

Laura T. Bidwell,	Sacramento, Cal.
Lottie M. Berry,	Albion.
Lou A. Copp,	Plainwell.
Eva L. Coney,	Albion.
Anna Cassady,	Grass Lake.
Florine M. Defendorf,	Dowagiac.
Lina A. Hull,	Springport.
Belle C. Smith,	Albion.
Libbie L. Smith,	Marshall.
Will C. Webster,	Battle Creek.

GRADE VI.

Flora Adgate,	Ionia.
Irene Briggs,	Vicksburg.
Alice B. Bitting,	Ovid.

Blanche C. Gould,	Belvidere, Ill.
Louella Hartung,	Homer.
Edith Haslett,	Charlotte.
Hattie B. Lyons,	Corunna,
Susie B. Peck,	Albion.
Anna G. Pealer,	Three Rivers.
Lilla G. Smart,	Albion.
Sara E. Shepard,	Parma.
Eva C. Soule,	Parma.
Lillian H. Smith,	Cleveland.
Lola L. Todd,	San Francisco, Cal.

GRADE V.

Lida Austin,	Morrice.
Carrie M. Bentley,	Davis.
Parmelia A. Bruce,	Albion.
Jennie Church,	Lansing.
Georgia M. Gale,	Albion.
Minnie E. Henry,	Hastings.
Eva A. Joslyn,	Howell.
Mary E. Lyons,	Corunna.
Mattie E. Lownsbery,	Albion.
Mena Mudge,	Hastings.
Georgina D. Peabody,	Hanover.
Annie A. Rowell,	Morrice.
Minnie E. Smart,	Albion.
Francis M. Tuttle,	Walled Lake.
Kate Whitaker,	Albion.

GRADE IV:

Anna L. Blackmar,	Napoleon.
Hattie C. Bunce,	Maryville.
Blanche Bunday,	Albion.
Fannie Catton,	Constantine.
Mamie Dobson,	Chicago, Ill.
Sena Gifford,	Albion.
Ellen Goold,	Howard, Dak.
Annie E. Hull,	Albion.
Annie Higgins,	Springport.
Gladys Johnson,	Bowne.
Lulu D. Keller,	Albion.
Ema Lewis,	Chelsea.
E. May Moses,	Seneca Falls, N. Y.
Eva L. Marzolf,	Colon.
Carrie E. Mershon,	Pritchardsville.
Millie M. Millard,	Spring Lake.
Carrie Quivey,	Jackson.
Hattie M. Rood,	Muskegon.
Flora A. Smith,	Meridian.
Lillie Snyder,	Hanover.
Lizzie M. Wright,	Albion.
Emma L. Warren,	Albion.
Nora White,	Bowne.

GRADE III.

Belle Fiske,	Albion.
Winifred L. Gale,	Albion.

Susie B. Ingalsbe,	Sodus.
Lucy J. Lawrason,	Fowler.
Nettie McGillivray,	Albion.
Bertha Parce,	Albion.
Hattie B. Smith,	Springport.
Adelle Stevens,	Parma.
Jennie E. Seeley,	Evart.
Maud Van Horn,	Dowling.

GRADE II.

Cora L. Barnes,	Albion.
Arthur M. Connable,	Petoskey.
Clarisa Dickie,	Albion.
Rhoby M. D. Herron,	Detroit.
Birdie E. Power,	Wixom.
Lulu Rouse,	Homer.
Leora Rouse,	Homer.
D. Perry Thomas,	Byron Center.

GRADE I.

Maggie Cole,	Albion.
Helen A. Davis,	Albion.
Alta E. Oldman,	Albion.
Samuel E. Porter,	Springport.

PIPE ORGAN.

Hattie F. Reynolds,	Horton.
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CABINET ORGAN.

Edward S. Carr,	Homer.
Mrs. M. L. Miner,	Albion.

CORNET.

Nellie G. Rowell,	Morrice.
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VIOLIN.

Maud A. Bartley,	Albion.
Lucien Barnes,	Albion.
Nellie M. Brewer,	Cleveland, Ohio.
Irene Briggs,	Vicksburg.
Fannie Comstock,	Albion.
Minnie E. Henry,	Hastings.
Susie B. Ingalsbe,	Sodus.
Eva A. Joslin,	Howell.
Charles Jeffries,	Albion.
Ota Kern,	Homer.
Elmer Loeher,	Marengo.
Mrs. J. M. Moses,	Marshall.
Lilla G. Smart,	Albion.
Carl Schumacher,	Albion.
Birdie Smith,	Albion.
Mabel Smith,	Albion.
Franc A. Stafford,	Port Hope.
John P. Strong,	Vicksburg.
Josie Smith,	Albion.
Lulu Todd,	San Francisco, Cal.

CELLO.

Lottie Bruce,	Albion.
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GUITAR.

Carrie M. Brewer,.....	Cleveland, Ohio.
Annie E. Hull,.....	Albion.
Mrs. S. Morris,.....	Litchfield.
Olive M. Thomas,.....	Albion.

VOICE.

Flora Adgate,.....	Ionia.
J. Edgar Arney,.....	Albion.
Amanda Barnhart,.....	Albion.
Rena S. Barber,.....	Quincy.
Carrie M. Bruce,.....	Albion.
Arthur E. Bibbins,.....	Hanover.
Maud A. Bartley,.....	Albion.
Anna L. Blackmar,.....	Napoleon.
Clemmie M. Brooks,.....	Parma.
Wilbur S. Burns,.....	Albion.
Edward S. Carr,.....	Homer.
Louie A. Copp,.....	Plainwell.
Eva L. Coney,.....	Albion.
Jennie Church,.....	Lansing.
Fannie Catton,.....	Constantine.
Eva Crittenden,.....	Albion.
Emma L. Crittenden,.....	Albion.
Carl E. Copp,.....	Plainwell.
Anna Dickey,.....	Burlington.
Mamie Dobson,.....	Chicago, Ill.
Emma Dickerson,.....	Butler.
Homer Folks,.....	Hanover.
Charles B. Gale,.....	Albion.
Anna E. Hull,.....	Albion.
Lina A. Hull,.....	Springport.
Hamilton W. Hewitt,.....	Marshall.
Rhoby M. D. Herron,.....	Detroit.
Minnie E. Henry,.....	Hastings.
Louella Hartung,.....	Homer.
Hattie M. Johnson,.....	Manistee.
Flora Knickerbocker,.....	Albion.
G. Fred Knappen,.....	Albion.
Hattie B. Lyons,.....	Corunna.
Lucy J. Lawrason,.....	Fowler.
Frank H. Loomis,.....	Edwardsburg.
Hattie A. Lovejoy,.....	Albion.
Belle Miller,.....	Litchfield.
Mina Mudge,.....	Hastings.
Eva L. Marzolf,.....	Celon.
Myra R. Maher,.....	Albion.
Cora E. Mather,.....	Albion.
Ernest M. Marsh,.....	Albion.
Maggie L. Miller,.....	Albion.
George G. Newell,.....	Grand Rapids.
Alta E. Oldman,.....	Albion.
Anna G. Pealer,.....	Three Rivers.
Georgena D. Peabody,.....	Hanover.
Bertha Parce,.....	Albion.
Florence M. Perrine,.....	Meabry, Dak.

Charles E. Reynolds,	Horton.
Nellie M. Smith,	Albion.
Belle C. Smith,	Albion.
Lillian M. Stryker,	Albion.
Franc A. Stafford,	Port Hope.
Ned Lackett,	Albion.
Fred Sackett,	Albion.
Lee Shank,	Albion.
Ella A. Snook,	Jackson.
Minnie E. Smart,	Albion.
Herman C. Scripps,	Detroit.
Adelle Stevens,	Parma.
Jennie E. Seeley,	Ewart.
Nora Taylor,	Parma.
Olive M. Thomas,	Albion.
Emma L. Warren,	Albion.

HARMONY.

Flora Adgate,	Ionia.
Lida H. Austin,	Morrice
Laura T. Bidwell,	Sacramento, Cal
Lottie M. Berry,	Albion.
Garrie M. Bentley,	Davis.
Irene Briggs,	Vicksburg.
Pamelia M. Bruce,	Albion.
Alice B. Bitting,	Ovid.
Lou A. Copp,	Plainwell.
Eva L. Coney,	Albion.
Jennie Church,	Lansing.
Walter M. Connable,	Petoskey.
Fannie Catton,	Constantine
Florine M. Defendorf,	Dowagiac.
Bert A. Gale,	Albion.
Lina A. Hull,	Springport.
Louella Hartung,	Homer.
Anna Higgins,	Springport.
Maria Hewitt,	— Out.
Edith Haslett,	Charlotte.
Eva A. Joslin,	Howell.
Mary E. Lyons,	Corunna.
Hattie B. Lyons,	Corunna.
Lucy J. Lawrason,	Fowler.
Mena Mudge,	Hastings.
Eva L. Marzolf,	Colon.
Susie B. Peck,	Albion.
Samuel E. Porter,	Springport.
Annie A. Rowell,	Morrice.
Hattie M. Rood,	Rockford, Ill.
Sarah E. Shepard,	Parma.
Lilla G. Smart,	Albion.
Libbie L. Smith,	Marshall
Lillian H. Smith,	Cleveland, Ohio.
Eva C. Soule,	Parma.
Lola L. Todd,	San Francisco, Cal.
Frances M. Tuttle,	Walled Lake.
Will C. Webster,	Bottle Creek.

Students in Commercial Department.

N. Bates Ackley.....	Albion.
Carrie M. Brewer.....	Cleveland, O.
Nellie M. Brewer.....	Cleveland, O.
Herbert M. Brown.....	Albion.
Edward S. Carr.....	Albion.
E. Joe Clarke.....	Albion.
Charles L. Curtis.....	Albion.
W. Sherman Daskam.....	Albion.
Wm. A. Davids.....	Pulaski.
Anna L. Dickey.....	Jackson.
Lucinda G. Dickey.....	Jackson.
Grace E. Dewey.....	Concord.
Harvey A. Doolittle.....	Tekonssha.
James F. Ferguson.....	Albion.
Wm. G. Florence.....	Albion.
Bert. A. Gale.....	Albion.
Elliot C. Gale.....	Albion.
D. Albertson Garfield.....	Albion.
Elmer C. Glenn.....	Chelsea.
Claude Goodrich.....	Albion.
Chas. W. House.....	Albion.
Stanton C. Howard.....	Albion.
Elmer L. Jacobs.....	Albion.
Alfred W. Jilbert.....	Allouez Mine.
Anna Johnson.....	Prichardville.
Frank U. Jones.....	Albion.
Shelly B. Jones.....	Greenville.
G. Fred. Knappen.....	Albion.
Dwight W. Knickerbocker.....	Albion.
Geo. H. Kempf.....	Chelsea.
Creighton B. Lane.....	Albion.
Edith B. Latham.....	Hastings.
Otis A. Leonard.....	Albion.
Herbert H. Mann.....	Albion.
Yuba C. Maynard.....	Marshall.
Nellie D. Miner.....	Sanford.
La Verne Peterson.....	Albion.
Elmer J. Peachey.....	Albion.
Chas. A. Phelps.....	Whitehall.
Lewis Reed.....	Sheridan.
Chas. E. Reynolds.....	Horton.
Anna A. Rowell.....	Morrice.
Nellie G. Rowell.....	Morrice.
Chas. F. Scott.....	Albion.
Minnie E. Smart.....	Albion.
Albert T. Swift.....	Albion.
Louis P. Strong.....	Vicksburg.
Jay Ver Valin.....	Albion

Students in the School of Painting.

NAME.	RESIDENCE.
Bertha Andrews.....	Flint.
Clara Babcock.....	Albion.
Carrie M. Bentley.....	Davis.
Anna L. Blackmar.....	Napoleon.
Martha A. Brockway.....	Albion.
Sarah S. Buswell.....	Albion.
Mary E. Casey.....	Albion.
Mamie Dobson.....	Chicago, Ill.
Rudie Dysinger.....	Lockport, N. Y.
Belle Fairbank.....	Litchfield.
May Fanning.....	Albion.
Jennie Galloway.....	Dundee.
Amanda Groff.....	Albion.
Myrtle Graves.....	Albion.
Orpha Howlett.....	Albion.
Lulu D. Keller.....	Albion.
Louise Lusk.....	Marengo.
Lizzie Landon.....	Albion.
Myra Maher.....	Albion.
Lou R. Miller.....	Albion.
Mrs. M. A. Morris.....	Litchfield.
Belle Miller.....	Litchfield.
Belle McPherson.....	Marengo.
Geo. G. Newell.....	Grand Rapids.
Annie Ott.....	Albion.
Georgia Patterson.....	Marengo.
Libbie L. Smith.....	Marshall.
Della S. Warner.....	Kendall.

SUMMARY OF STUDENTS.

COLLEGE.

Seniors....	16
Juniors	12
Sophomores	13
Freshmen.....	42— 83

PREPARATORY SCHOOL.

Fourth Year	30
Third Year.....	26
Second Year	40
First Year	34—130
Unclassified...	5
Academic	65

CONSERVATORY OF MUSIC.

Post Graduates....	7
Piano	84
Organ	3
Violin	20
Guitar	4
Cello... ..	1
Coronet....	1
Voice Culture	66
Harmony	38—224
Painting...	28
Commercial studies...	48
Total.....	583
Deduct for counting twice....	170
Total.....	413
Members of the Orchestra	50

Summary of Degrees Heretofore Conferred.

By the Female College.

M. A. S.	116
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By the College.

B. A....	74
B. Ph.	39
B. S....	61
M. A.	27
M. Ph.	1
M. S.	16
D. D....	8
LL. D....	1
Graduates in Music...	53

CALENDAR FOR 1887-8.

1887.

- June 14—Term Examinations begin.
June 15—Commencement Prayer-Meeting, 8 p. m.
June 19—Commencement Sunday.
June 20—Conservatory Day.
June 21—College Day—Meeting of Board of Trustees.
June 22—Alumni Day—Meeting of Board of Managers of the Asbury Centenary Association.
June 23—Commencement Day—Year closes.
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OPENING OF THE COLLEGE YEAR.

- Sept. 20—Examination of Candidates for Admission; also special Examination of any students heretofore enrolled.
Sept. 21—Enrollment Day—commencing 9 a. m.
Sept. 22—Recitations begin—Chapel 9 a. m.
Dec. 16—Closing Examinations of Term begin.
Dec. 21—Term closes.
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HOLIDAY VACATION.

1888.

- Jan. 3—Entrance and Special Examinations, 9 a. m.
Jan. 4—Enrollment Day.
Jan. 5—Recitations begin—Chapel 9 a. m.
Jan. 26—Day of Prayer for Colleges.
March 20—Closing Term Examinations begin.
March 23—Term closes.
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SPRING VACATION.

- April 3—Entrance and Special Examinations.
April 4—Enrollment Day.
April 5—Recitations begin—Chapel 9 a. m.
June 21—Commencement Day, preceded by Exercises of Commencement Week.

Life Insurance for the Benefit of Colleges.

Liberal-minded men are beginning to appreciate the fact that no other investment can be made which will more certainly produce important and beneficent results than donations to Christian colleges. Persons who desire to contribute to the usefulness of institutions of learning not unfrequently find it difficult to withdraw from use in active business such sums as they would be glad to give. Hence in many recent cases they have resorted to the plan of insuring their lives in the interest of some special college of learning. By paying a comparatively small sum of money each year they are able to assure to such institution a considerably large gift without taking it from present business or lessening the amount to be left to heirs at death. The following table exhibits the ordinary life rates :

AGE.	Annual premium on \$1,000.	Annual premium on \$5,000.	Annual premium on \$10,000.	Annual premium on \$20,000.
Thirty.....	\$ 46.97	\$ 234.85	\$ 469.70	\$ 939.40
Thirty-five.....	52.40	262.00	524.00	1,048.00
Forty.....	59.09	295.45	590.90	1,181.80
Forty-five.....	67.37	336.85	673.70	1,347.40
Fifty.....	77.77	388.85	777.70	1,555.40
Fifty-five.....	90.79	453.95	907.90	1,815.80

The above figures are taken from the table of rates of one of the companies doing business in this State. Other companies may make rates slightly differing from these.



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ADOPTED BY THE MODERN PHILOLOGY SECTION, AT THE 38th
CONVENTION OF GERMAN PHILOLOGISTS AND TEACHERS:

"Supplementary to the resolution which was adopted last year—namely, that in elementary instruction in both French and English," (i. e. Foreign Languages,) "the reading matter is initial and cardinal, and grammar is always to be treated inductively at the outset—we are agreed upon the following points:

1. *"Reading is likewise to be made the principal foundation of superior instruction.*

2. *"Grammar is, as far as possible, to be treated inductively in the upper classes."*

—[*American Journal of Philology*, April, 1887.